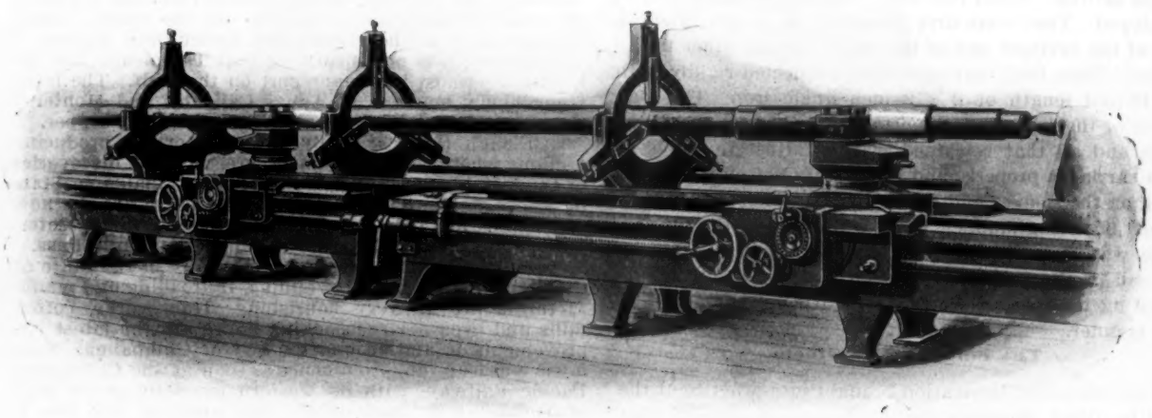
THE IRON AGE.

THURSDAY, FEBRUARY 1, 1900

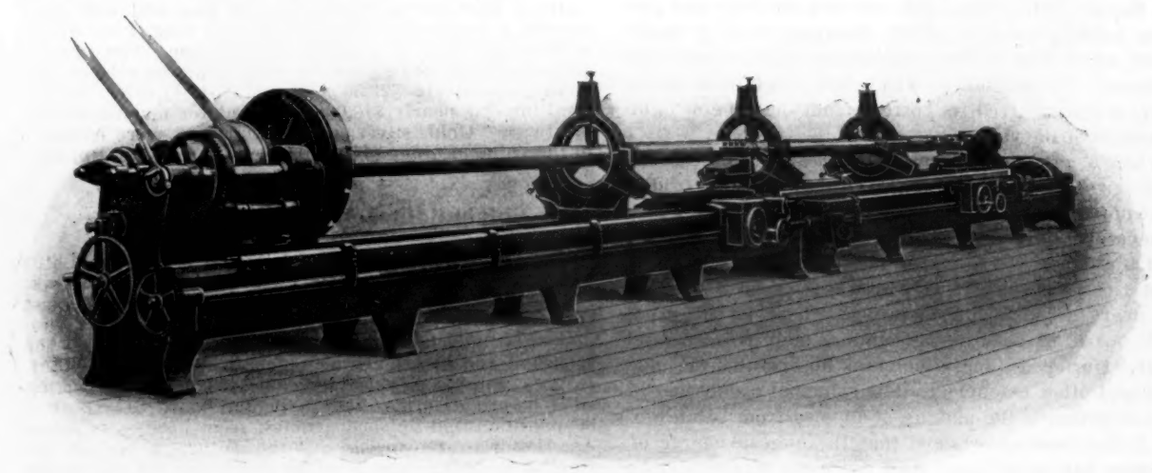
Large Lathes Arranged Tandem Fashion.

Notes in New York Navy Yard.

Since Commander J. A. B. Smith was transferred from the Norfolk Navy Yard and was appointed chief of the Department of Steam Engineering of the New York Yard at Brooklyn, many improvements have been inaugurated which are proving of much practical benefit to the service. Chief Engineer Smith has also displayed much adaptability in coping with large and heavy work, despite the woeful lack of proper machinery under which he is laboring. While visiting the yards recently an illustration of this fact captured our attention in one of the



VIEW SHOWING CARRIAGE CONNECTION.



LARGE LATHES ARRANGED TANDEM FASHION.

Temporary Machine Shops.

In this connection it might prove of interest to relate a little of the history of this particular shop. Shortly after the fire which destroyed the old machine shop and blotted from the service of the navy an awful example of antiquated machinery and tools, the necessity for a shop containing large tools arose; a temporary shanty excellently equipped with the smaller sizes of machine tools being already in operation. At that time about half of the old foundry building was used for the storage of scrap of various kinds, ranging from copper tubing to marine boilers long since out of commission. The rubbish was cleaned out, a stream of water turned on the dust bedecked walls and rafters, and there was the site for the much needed shop. Two large electric traveling cranes traversed the half of this building, which was still used by the molders. Out of the ruins of the burned machine shop was resurrected a sufficient quantity of steel plates and beams to form trusses, which were used for continuing the crane ways over the entire length of the building. One of the electric cranes was then run onto the newly constructed ways, a bulkhead or partition was built in the center of the building and the shop was created. A coat of white paint, several skylights, flooring, a nice equipment of big tools and the job was finished.

Lathes Arranged Tandem.

It is this shop which contains the rigging illustrated. The purpose of the arrangement was to turn brass sleeves which had been shrunk on 35-foot propeller shafts, and turn three-sixteenths of the entire shaft. The brass sleeves or casings were each about 3½ feet in

length and 7¼ inches diameter, and there were two of them on each shaft, spaced at an interval of about 18 feet. In addition to turning down these sleeves the end of the shaft nearest the tail stock required considerable work, among which was the cutting of a taper and chasing an end screw. There was not a lathe in the yard with a bed of sufficient length capable of handling this work. The trick of setting up two lathes tandem fashion and removing the headstock of one and the tailstock of the other was resorted to. The tools were 20-foot Pond lathes. The original idea was to use but one carriage, the one on the lathe containing the headstock, of course. As the brass sleeves to be turned were 18 feet apart, it was the intention to turn one sleeve and half of the shaft, then remove the shaft, reverse it and turn the other. But the arrangement adopted not only turns both sleeves simultaneously but finishes the shaft in a single setting. To do this both carriages were, of course, employed. They were first placed at the proper interval, one at the furthest end of the shaft and the other in the center. Then both carriages were connected rigidly with an 18-foot length of 2 x 2 inch angle iron. The lead screw of the furthest lathe was disengaged from the carriage and all that remained was to adjust the tools of both carriages properly and go ahead. Not only was the work on the sleeves and turning of the shaft executed in a most flattering manner, but the working of the far carriage was so perfect that it was employed in finishing the end of the shaft, cutting the taper and cutting the screw on its end. A number of shafts were finished in this manner.

The Portable Tool Room.

This is another innovation brought into practice at the yard by Chief Engineer Smith. It was discovered that much time was lost by workmen running between the various dry docks and vessels, where they might be at work, and the tool room in search of the tools which they needed from time to time. To avoid this there were constructed several frame buildings, each about 10 x 12 feet, with gable roof and 12 feet from floor to top of gable. Steel bands passing under the buildings and up to the bottom of the gables had heavy steel rings fastened to their ends near the roof.

In each of the little tool houses were erected an 18-inch Snyder drill press, a bolt and nut machine and pipe cutter, built by the Jarecki Mfg. Company, a set of emery wheels, an oil tank, a full complement of tools and other requisites. The machinery was belted to a 5 horse-power motor, which received its current from the general lighting system of the yard.

When a gang of men is working at one of the dry docks or vessels anchored at the yard, steel cable bridles are swung over the house and hooked to the rings which we have previously mentioned. The entire affair is then lifted by one of the 40-ton locomotive cranes which run about the yard, and it is placed at an advantageous spot near the scene of operation. There is the usual check board in each house, and a man is placed in charge. During his spare moments he operates the pipe cutter and other machinery. His principal occupation in this connection is the making of nipples from scrap piping. It has been ascertained that the man in charge of the house has saved more than twice his wages simply in the making of nipples. The entire shop weighs about 5 tons.

When Assistant Secretary of the Navy Allen last visited the Brooklyn yard he was well pleased with this little makeshift, and it is very likely that a general adoption of the scheme will be urged among the chiefs of the various navy yards throughout the country. Chief Engineer Smith has a valuable assistant in his work in Master Mechanic Samuel Irwin.

President James J. Hill, of the Great Northern Railroad, announces that four large steamships are now building for the Oriental trade in connection with his road, each of which will be 730 feet long, 74 feet beam, and 50 feet from water to deck line, with a carrying capacity of 22,000 tons, or about that of 1400 loaded freight cars. The vessels will be ready for service in 18 months.

Progress in Mexico.

CITY OF MEXICO, January 17, 1900.—Although the United States has made phenomenal progress in material ways lately the Mexican Republic is very little behind us in her own sphere of action. A long period of uninterrupted peace, fostered in every way by the government of General Diaz, the universal credit which the country and its business men enjoy in our country and in Europe, and the new spirit of genuine enterprise which has sprung up in the last few years—all these conditions have brought about the present prosperity of Mexico.

Business is so active with the railroads that there is a glut of freight; that is especially so at the ports, such as Tampico, the eastern terminus of the Central Mexican Railway. As this line, which reaches from our border at El Paso to the City of Mexico on the south, passes through most of the mining and agricultural regions of the country, it is not surprising that Tampico is fast becoming the most important port on the Gulf. The large Guggenheim smelters at Aguas Calientes and Monterey are the principal exporters of silver, lead and copper.

Although there are only three important producing sections where copper is mined here, valuable discoveries of the metal have lately been made near Villaldama, State of Nuevo Leon. Then, not far to the north are the new coal mines in Coahuila, a region tributary to the International Railroad, which enters Mexico at Eagle Pass.

Somewhat further west and especially in the State of Chihuahua, gold and silver mining, railroading and manufacturing are all very flourishing. Iron works, cotton mills and even a large packing house are the latest improvements in and around the city of Chihuahua. This town will leap into prominence as soon as the Chihuahua Pacific Railway, with its western terminus at the port of Topolobampo, is finished. The work on this line is being actively pushed by its president, Enrique C. Creel, a well-known financier of American extraction, who in this, as well as his many other notable enterprises, shows that he has lost none of his Yankee energy by having been born on Mexican soil. In fact, Mr. Creel, in the course of a very few months, has organized the Anglo-Mexican Banking Company and the Central Bank of Mexico, capital $6,000,000, connected with J. P. Morgan & Co. of New York and the principal banks of London and Paris. The large packing houses in the course of erection in Northern Mexico are also enterprises in which this gentleman is connected. All this section of the country produces immense herds of cattle, and with the railroad facilities which Chihuahua has, and will have shortly, it is expected that before very long there will be a Mexican rival to Chicago in this line. The imports and exports of Mexico during the five last months of 1899 were respectively $22,565,522 and $54,941,197. Of the total imports nearly $10,000,000 went for machinery and hardware. Gold, silver, copper and lead were exported to the value of almost $33,000,000. J. R. CHANDLER.

Shipbuilding on the Atlantic Coast.

In the course of a speech delivered before the Lotus Club of New York, Andrew Carnegie spoke as follows:

The cheapest steel means before long the cheapest ships, as it to-day means the cheapest agricultural implements, bicycles, motor cars, wire, nails, and the thousand and one things of which steel is the chief part. It goes without saying that we are to stop exporting steel in crude forms, and more and more to export it in manufactured finished articles, from needles to ships. As Historian Green says, "the future home of the English-speaking race is to be found not on the banks of the Tweed or the Thames, but on those of the Hudson and the Mississippi." So I predict that the future seat of shipbuilding is to be found not on the shores of Britain, but upon our Atlantic seaboard.

I see nothing to prevent this country of ours from being the chief source of the supply of steel and the articles made from steel for the rest of the less favored world. Our supplies of the raw materials—ironstone, coal, limestone—are superior to those of any other nation in any known part of the globe, and we have in the American workingman, which our stimulating climate and our free schools and, I hope, our free libraries produce, a workman superior to any other that has appeared upon the earth—more intelligent, quicker, more versatile, more progressive and more fair minded, more industrious, more sober, and, let me add, altogether more of a self respecting man than any other nation has been favored with.

The Most Perfect Machine Shop.*—V.

Building No. 16 of the Schenectady Works of the General Electric Company.

BY S. D. V. BURR.

The Newton Cold Saw.

The illustration, Fig. 32, is of a Newton cold saw cutting off machine driven by a direct coupled 5 horse-power General Electric motor mounted on top of one end of the bed. Power is transmitted from the motor through pinions and gears to the saw arbor and feed table. The feed is operated by a worm shaft passing in front of a friction plate, which also actuates the quick return. Moving the lever in one direction operates the cutting stroke, while the reverse motion of the lever brings the friction plate into engagement, which quickly moves the head backward.

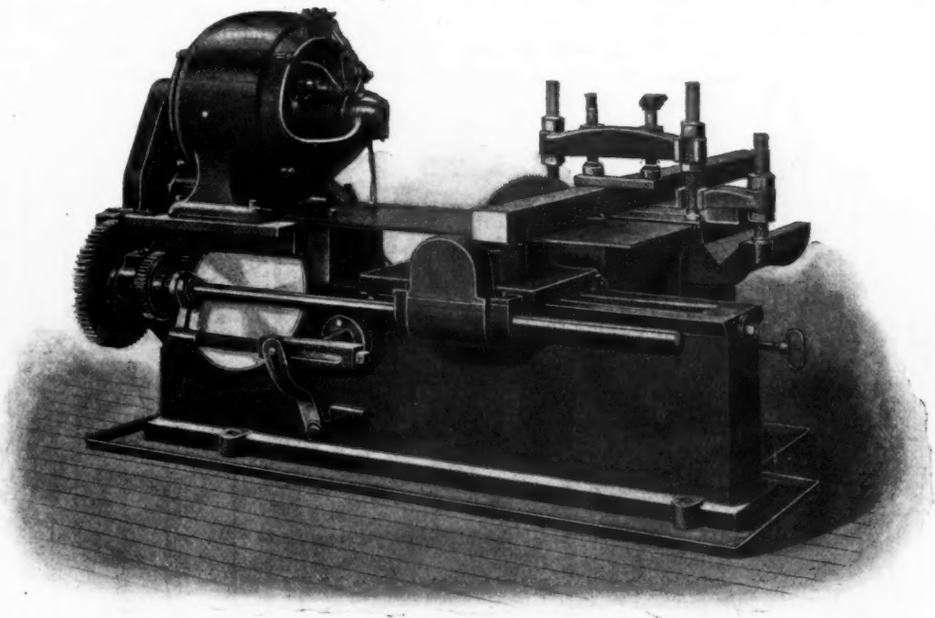


Fig. 32.—Newton Cold Saw with Motor on Top.

The Newton Portable Slotting Machines.

These machines are shown in Fig. 33, and in the front and end elevations, Figs. 34 and 35. This machine is driven by a 12½ horse-power motor, placed in the inside of the housing. The armature shaft is extended, its outer extremity being provided with a worm engaging with a spiral gear mounted on a shaft on the side of the machine which carries the driving pulley. The head or ram of the machine is counterweighted, as shown in Fig. 33, the weight being on the inside of the housing. The ram has a stroke of 60 inches and an automatic cross feed of 40 inches.

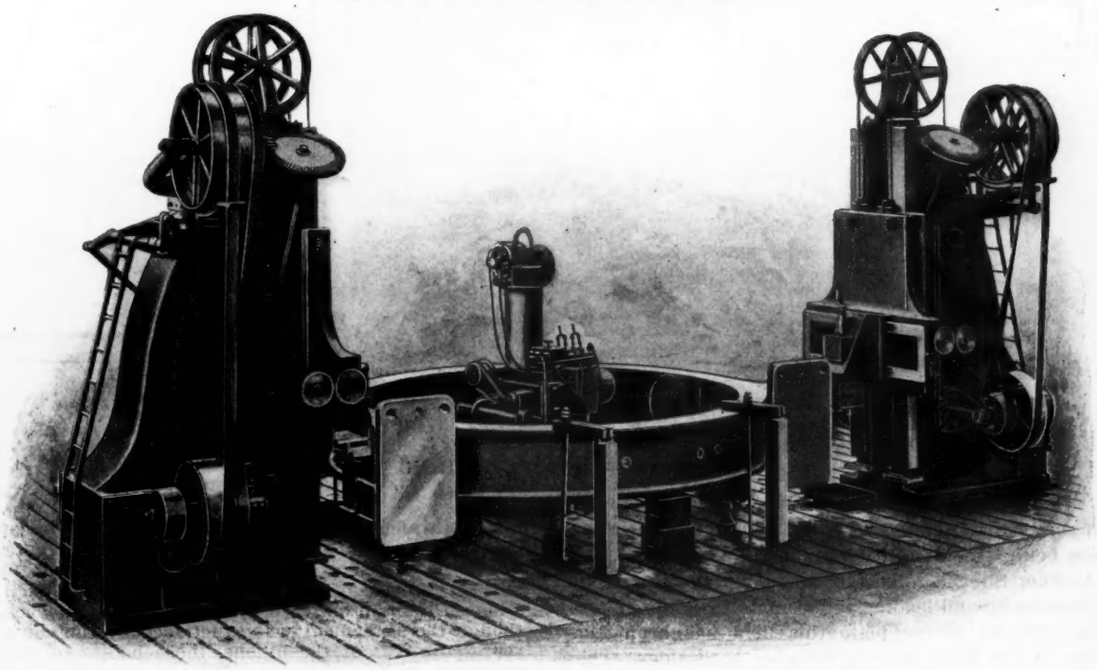


Fig. 33.—Newton Portable Slotting Machines.—Three Machines at Work Simultaneously on Same Piece.

THE MOST PERFECT MACHINE SHOP.

These, together with the tools shown in Fig. 36, were designed particularly to meet the requirements of this establishment. They are the heaviest portable tools employed, each weighing in the neighborhood of 35,000 pounds. They are designed upon practically the same

*See *The Iron Age*, January 4, 11, 18 and 25, 1900.

lines, the differences in construction being of minor importance.

Three Machines Working on the Same Piece.

The engraving, Fig. 36, is a most interesting one as illustrating the policy governing the shop. Further than this it shows the use of the floor plate and of the many portable tools provided. On all large work as many machines as possible are brought to bear upon it, the object being, as expressed in the previous article, to finish each job in the shortest time that is consistent with true and perfect workmanship. In this particular case we find three tools simultaneously in operation upon the same field. These are two of the largest slotting machines and a horizontal drill or boring machine. It will be noted that they interfere in no way with each other, their operations being absolutely independent in every sense.

Another thing here shown very plainly is the method of blocking up and holding the work to the plate. Before being brought to the plate this field has been faced in one of the large turning mills on both sides. There are, therefore, two perfectly true and parallel surfaces, either one of which can be used in all subsequent operations as the foundation or base upon which the work is carried forward. The ring is first blocked up until its turned surfaces are parallel with the plate. Gauges are provided for facilitating this task and in order to assure accuracy in the alignment. Now since the throw of the ram of the slotter is vertical it follows that any surfaces planed by it on the field will also be vertical to the plate and therefore to the field. Again, since the horizontal travel of the cutter of the slotter is in a straight line the surface resulting from its operation will be true in itself and true in its relation to the turned faces of the field. In consequence of this the feet of the ring and the surfaces intended to receive the pole pieces are accurate in every respect. For the same reasons the holes bored by the drill are also true. We neglected to state that after the field piece had been blocked up it was held securely in position by the bolts inserted in the grooves of the plate.

(To be continued.)

The Chicago Building Trades.

The bright prospects of an amicable settlement of the labor troubles in the Chicago building trades are vanishing. The *Economist* of that city says that there is every prospect of a lock out being ordered February 1. The situation is no different now from what it was just before the beginning of the new year, when aggressive action on the part of the employers was anticipated. To-

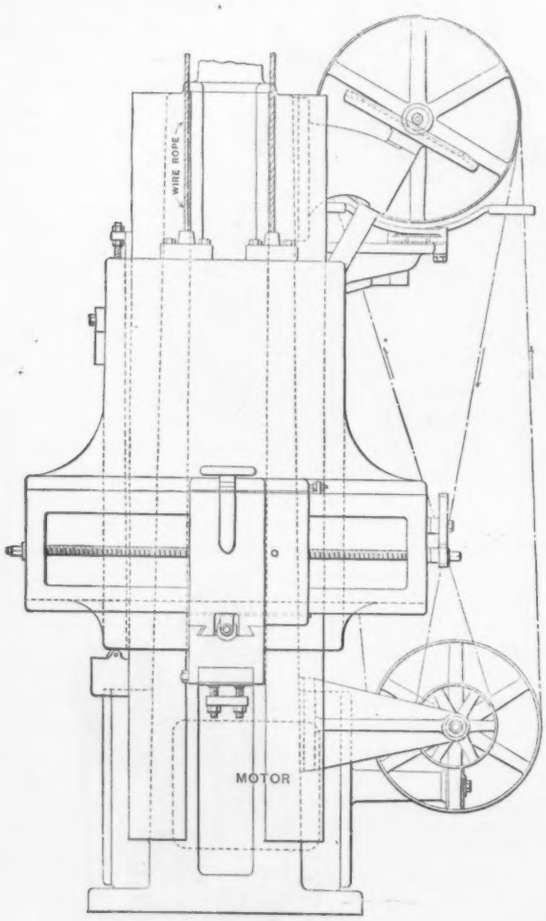


Fig. 34.—Front Elevation of Fig. 33.

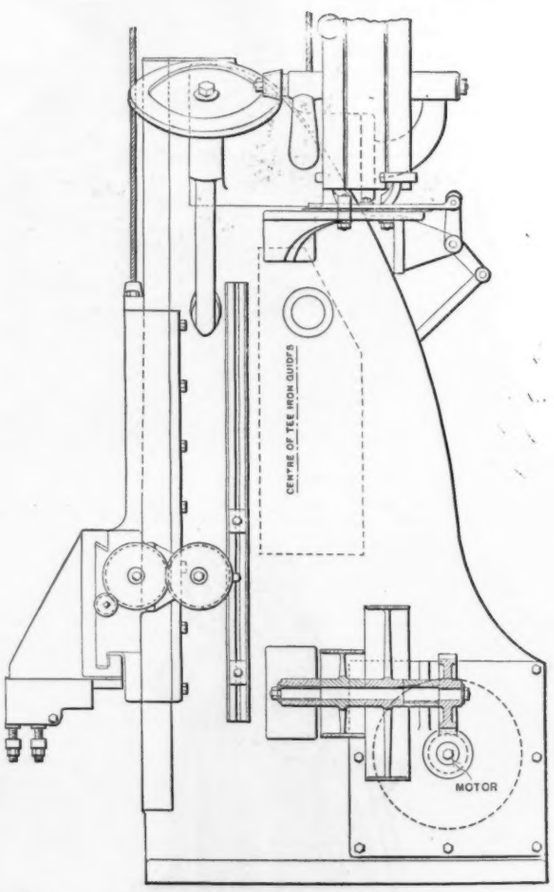


Fig. 35.—End Elevation of Fig. 33.

THE MOST PERFECT MACHINE SHOP.

all appearance the plan for the adoption of a compromise agreement centering in arbitration of disputes has utterly failed. The reception of the agreement by the various unions of the Building Trades Council has widened the gap between employers and employees. Although the agreement was sanctioned by the committee representatives of the unions, those bodies to which it went for confirmation have ignored it entirely or have taken action which amounts to repudiating it. The contractors consider that they made important overtures, and the reception given them is taken as proof that there will be no peaceable settlement of differences, and they feel that the issue might as well be squarely met at once. The demands for an advance of carpenters' wages from 42 to 50 cents an hour and for an advance of 5 cents an hour to masons' helpers does not appeal to contractors under the circumstances. The demoralizing influences of the labor situation on building are apparent everywhere. About the only work in architects' offices is for buildings at outside points. The showing of building permits is probably exceeded by that of a number of outside cities of not over 50,000 population. Local builders are particularly displeased with the disposition shown to discriminate against Chicago. Agreements among material men have in many cases provided for deliveries

at outside points at much lower prices than were demanded in Chicago. Now the unions are insisting on a local scale of wages and a series of stipulations which no pretense is made of maintaining outside.

The Engineering Department of the American Tin Plate Company.

By March 1 the entire engineering department of the American Tin Plate Company will be located in Pittsburgh, with headquarters on the twelfth floor, front, of the Carnegie Building, occupying six or seven rooms. A branch of the auditing force will also be located in Pittsburgh. The present rooms occupied by J. P. Phillips, manager of Pittsburgh district for the American Tin Plate Company, will be vacated. The engineering department of the American Tin Plate Company is in charge of Chas. W. Bray, for some years with Lloyd Booth Company, and assistant superintendent of the Beaver Tin Plate Company, at Lisbon, Ohio, previous to their being taken over by the American Tin Plate Company. That part of the auditing department which will be removed to Pittsburgh will deal only with the business transacted by the tin plate mills in the Pittsburgh district. This has heretofore been done in Chicago, but at considerable inconvenience. In this connection it may be of interest to note that the Star and Monongahela plants in Pittsburgh, which have been idle for some time, will probably be removed to Monessen, Pa. It is reported to be the intention of the American Tin Plate Company to manufacture tin plate in three districts—viz., Monessen, or Pittsburgh district, New Castle and Elwood, Ind. It is stated that all the various tin plate plants of the company will be removed to one of the three above locations. As noted some time since, the general offices of the American Tin Plate Company are to be removed from Chicago to New York City.

American Mining and Metallurgy at Paris.

A unique feature of the United States Department of Mining and Metallurgy in the Mineral Palace at the coming Paris Exposition that is likely to attract the deserved attention and interest of scholars and students, associates itself with the collective exhibits of systematic mineralogy and metallurgy. Early in the year the director of this department decided that this exhibit should contain examples, so far as they could be obtained, of all the minerals occurring in the United States and indicated in the eight groups of Dana's system of classification. The peculiar and happy feature of this work is to be found, however, in the fact that the collection of these minerals has been committed to representatives of five of our leading educational institutions. In order to bring this plan to a successful conclusion, it became necessary to secure certain sums of money over and above that which could be spared from the national fund. To effect this, the department entered into communication with State Boards, the institutions themselves, and private friends and patrons of the same, the sum required being promptly secured.

The plan now successfully financed, the next object was a more grateful one, since it enabled the Commissioner-General to authorize the directors of each institution to name a candidate who should receive the title of "Honorary Mineralogist for the Commissioner-General of the United States to the Paris Exposition of 1900"—a recognition and honor which were fully appreciated and willingly accepted by all. As an additional incentive to active effort, and in view of the fact that the institutions or their friends had rendered material financial assistance, as well as intelligent professional service, it was decided that each of these several collections should at the end of the exposition be returned to and

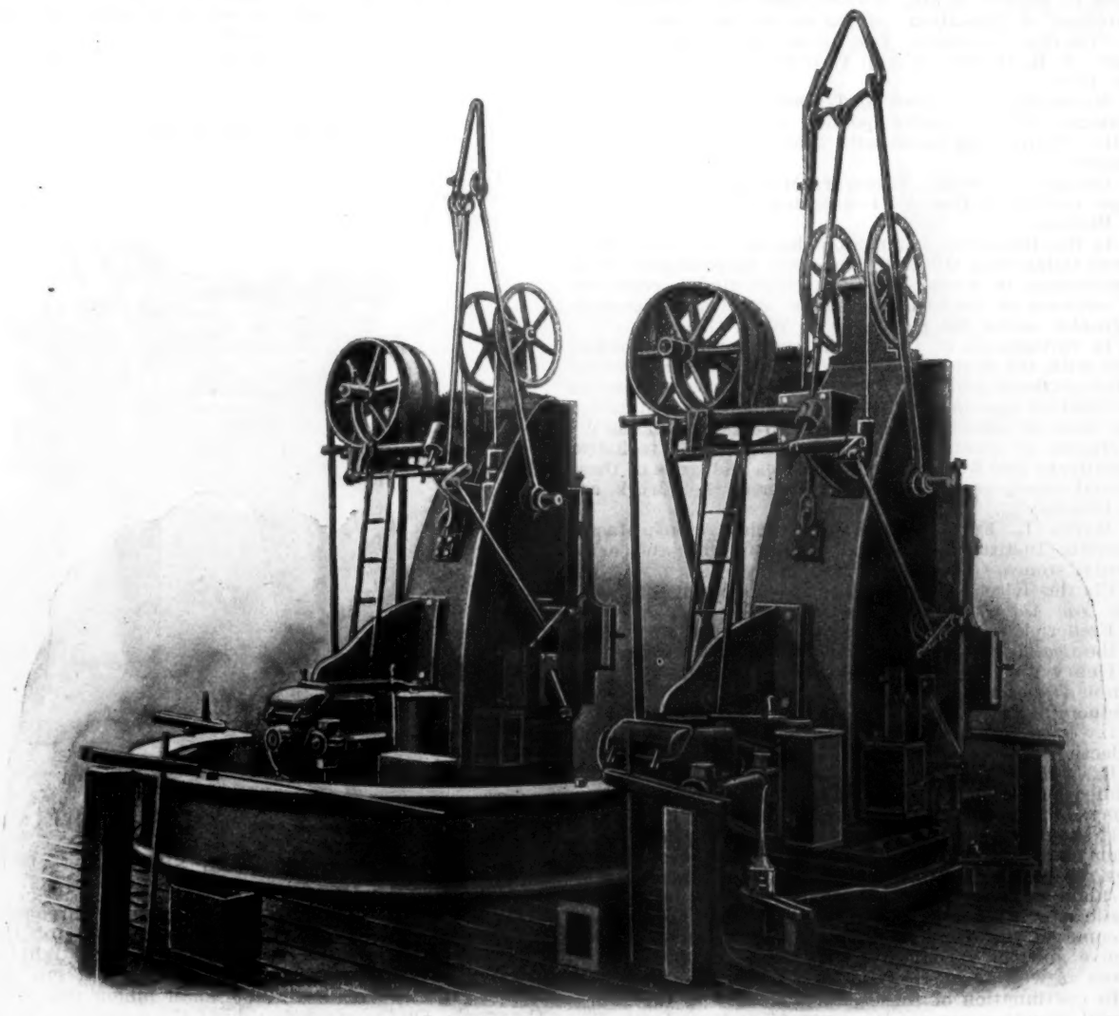


Fig. 36.—Newton Portable Slotting Machines.

THE MOST PERFECT MACHINE SHOP.

become the property of the institution whose candidate had collected and arranged it.

Although hopeful that the results would justify the efforts made, they have far exceeded all anticipation, and the complete display is certain to command the admiration of all who inspect it; this not only because of its intrinsic value and completeness, but also owing to the unique character of its origin. The names of the institutions and the Honorary Mineralogists representing them, together with the groups with which they have to do, are as follows:

Michigan School of Mines : Honorary Mineralogist, H. T. Mercer; Group I, Dana Classification—native elements. Special Patron, Board of Trustees.

Colorado College, Colorado : Honorary Mineralogist, Rufus M. Bagg, Jr.; Group II—sulphides, &c. Patron, Hon. Henry Wolcott.

Cornell University : Honorary Mineralogist, A. C. Gill; Groups III, IV, VII and VIII—sulpho salts, haloids, salts of organic acids, hydrocarbons, &c. Patron, Department of Education, United States Commission.

Princeton University, New Jersey : Honorary Mineralogist, E. R. Hewitt; Group V—oxides. Patron, M. Taylor Pyne.

Massachusetts Institute of Technology: Honorary Mineralogist, W. O. Crosby; portion of Group VI—oxygen salts. Patron, Massachusetts State Board of Commissioners.

Chicago University : Honorary Mineralogist, J. P. Iddings; portion of Group VI—silicates, &c. Patron, C. K. S. Billings.

In this immediate connection should be mentioned the Field Columbian Museum, Honorary Mineralogist, O. C. Farrington, to whom has been committed a collection of crystals of the United States, illustrating crystallography, under the patronage of W. J. Chalmers.

In furtherance of the idea above adopted in connection with the systematic collection of minerals, several other students and men of special fitness were honored by kindred appointments, and to them was committed the work of collecting certain special exhibits in the department of commercial ores and minerals, technical metallurgy and literature. The names and titles of these special appointees, with the character of their work, are as follows:

Myron L. Fuller, Honorary Special Agent; Massachusetts Institute of Technology. Building and ornamental stones.

Charles Kirchhoff, Honorary Special Agent; editor of *The Iron Age.* Iron ores.

Frederick E. Saward, Honorary Special Agent; editor of the *Coal Trade Journal.* Coals and cokes.

Henry W. Nichols, Honorary Special Agent; Field Columbian Museum. Zinc and lead ores and metallurgical products.

L. G. Laureau, Honorary Metallurgist. Technical collection of metallurgical products and processes.

R. E. Booraem, Honorary Librarian. Statistics and publications relative to geology, to underground topography, mineralogy, the working of mines, &c.

It should be especially noted, as conferring additional honor on all the individuals named, that in no case have they received any personal compensation, either by way of salary or honorariums, for their constant and enthusiastic efforts. But in lieu of this their reward is sure to come in the commendations which their work will receive and the recognition it is likely to obtain from jurors as well as judges.

In continuation of these efforts to give to this work special standing among the savants and students, the Commissioner-General has set aside a room to be the headquarters in the Department of Mining and Metallurgy for the members of the American Institute of Mining Engineers, which room will be graced by portraits of leading American scientists, including the presidents and ex-presidents of the institute, and prominent college professors and others identified with kindred work. In this room will be installed the library containing all the leading American publications on mining and metallurgy.

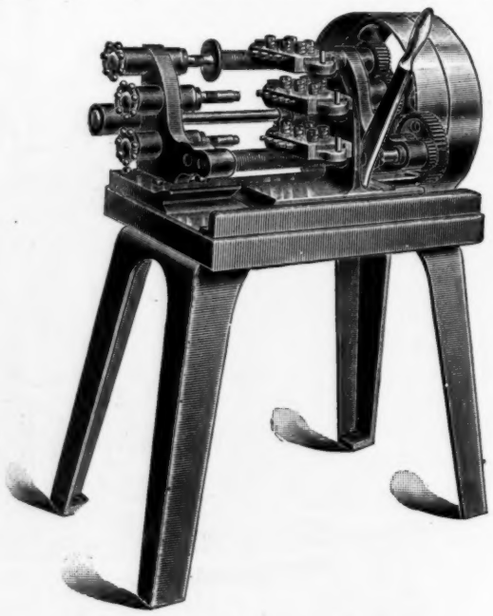
Above the bookshelves and portraits will be placed a continuous frieze of colored transparencies containing views of mining regions, metallurgical works, stone quarries, ore docks, &c. This apartment will also be furnished with chairs, tables, writing materials and scientific periodicals. It immediately adjoins the special exhibit of systematic mineralogy and gives promise of being a rendezvous for both American and foreign representatives whose labors and interests are associated with these special displays.

All these features, it should be understood, are independent of, though adjacent to, the display of commercial ores and minerals, and the extended and elaborate exhibits made by leading mining and metallurgical establishments. A technical metallurgical collection, on lines corresponding to the collections described above, is made at the expense of the Commissioner-General, and has been collected and arranged in a similar manner and designed to serve a like purpose as a scientific classification and arrangement with proper sequence of the products and processes of metallurgical methods in the reduction and utilization of iron, steel, lead, copper, zinc, aluminum and certain of the more rare metals, the whole constituting a special and complete record of progress and present attainment in the departments of practical and scientific metallurgy.

What is known as the installation of exhibits in this department promises to prove one of rare beauty and attractiveness. The main facade, which extends for 164 feet along the principal aisle in the Palace of Mines, is of bronze and marble, associated with granite columns of peculiar beauty. The panels are of rare marbles, and the columns of the heavier structural stones. The main central entrance is in the form of a portcullis, and the two other openings are beautiful examples of the iron and stone workers' art. This facade is sufficiently open along its whole length to admit of a comprehensive view from the exterior, and one standing within the main portal takes in by an upward glance the facade of the minor metallurgy or hardware exhibit, which extends a length of 80 feet along the main gallery.

The Hoefer Wire Spooler.

The machine for spooling wire, which is herewith illustrated, has just been brought out by the Hoefer Mfg. Company, formerly the Stover Novelty Works, Freeport, Ill. It can be arranged to spool one, two or three spools at a time. The cut shows the construction for three spools. The driving shaft is supplied with tight and loose pulleys and on this shaft is keyed a cut gear, which engages and drives the small pinion that drives the spools. On the opposite side of the machine is a hand lever, which by giving a fourth turn is so arranged that it will slip back and allow the spools to be disengaged. This hand wheel is in connection with the shaft, on the end of which is a loose or revolving center that turns on the shaft as the spool revolves, thus saving the wear on the spools. The carriage is supplied with a straightener, through which the wire is drawn before spooling, thus winding the wire without any kinks. This carriage is gibbed on the bed and slides back and forth as the spools are wound. The sliding back and forth is done by two spools, one revolving one way and the other the opposite, both having the same lead of thread. These two screws are fastened on the bed and are sufficiently apart to allow a one-half thread nut between the two shafts, so that when the nut engages one screw it revolves in one direction and carries the carriage to the desired end of the machine, and upon reversing the nut into the other shaft, which runs in the opposite direction, it reverses the carriage back to where it started, and continues this motion as often as the nut is thrown from one screw to the other. This machine can either be operated by throwing the hand lever back and forth, and also can be arranged by the shifting of the nut from one screw to another automatically. This machine was originally built to wind wire on spools for fence looms, but can be used for many different purposes requiring wire wound on spools.



THE HOEFER WIRE SPOOLER.

A New Circular Metal Saw.

The Marshall & Huschart Machinery Company, 62 and 64 South Canal street, Chicago, have placed upon the market the new circular metal saw herewith illustrated. It is intended to take the place of hack saw machines. Since the saw moves straight across the stock no loss of material occurs by it running sidewise and no time is lost squaring up afterward. This saw is operated by hand or by belt power. If the shop power is not in use the hand crank can be attached, as the machine can be run easily by hand and do rapid work. Two crank shafts are provided, one being intended for iron or steel and the other, which has higher speed, being intended for brass and other soft metals. The gears or crank may be changed readily from one to the other. The machine has an adjustable post to regulate the depth of the cut. The saw carrying arm may be thrown back out of the way and may remain there any length of time, whether the saw is running or not. The block for the saw to cut into is removable and is not cast on the bed, which would often prevent special work from being done. The tight pulley has a heavy rim and acts as a fly wheel when running at the high speed. While the machine is intended mainly for square cutting, angles may be cut with it by taking off the vise jaws and strapping down the work. The saw is 8 inches in diameter and is made as hard as possible. It must be sharpened by grinding on an emery wheel, a saw grinding stand with emery wheel and emery wheel dresser being furnished with each machine.

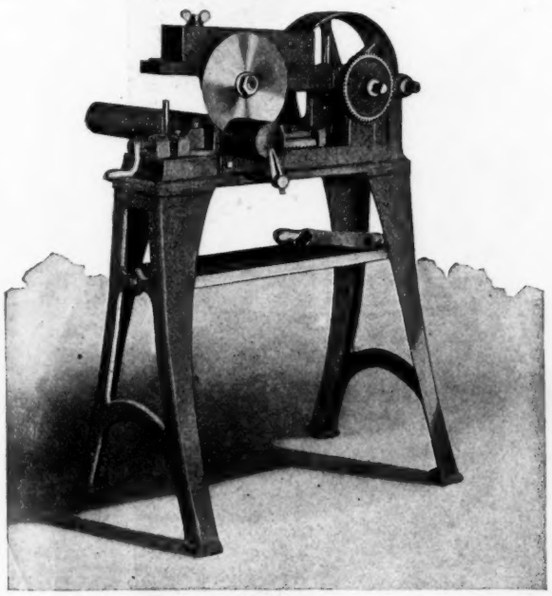


Fig. 1.—Saw at Work.

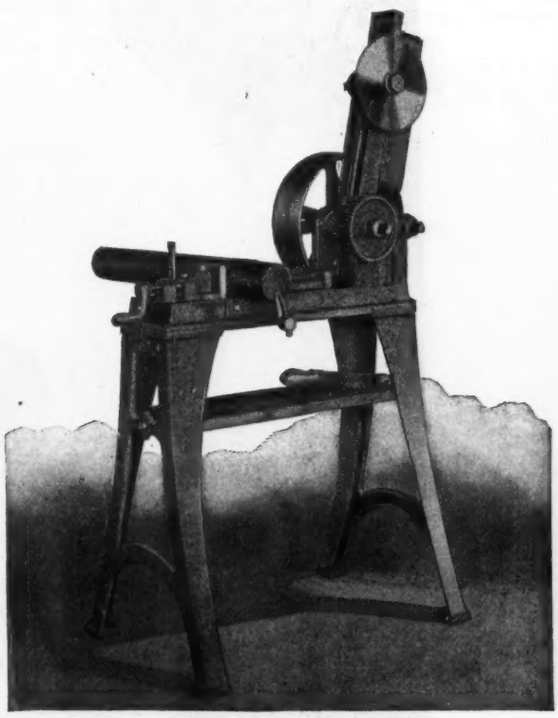


Fig. 2.—Saw with Arm Thrown Back.

NEW CIRCULAR METAL SAW.

The Duty on Drill Rods.

O. L. Spaulding, assistant secretary, has addressed to the Collector of Customs at Cleveland, Ohio, the following letter, under date of January 22:

Sir: In accordance with article 1136 of the Customs Regulations of 1892, the Department is in receipt of a report from the president of the Board of General Appraisers to the effect that there is a lack of uniformity between your port and the port of New York in the classification of certain steel rods, polished and tempered, No. 4 wire gauge, commercially known as drill rods, and polished wire or wire rods, untempered, Nos. 10 and 11 wire gauge.

It appears that the steel rods are valued at 6 shillings 2 pence per pound, less discount of 50 per cent. and 2½ per cent., and the wire, according to the size, at 3 pence to 6 shillings 2 pence per pound, less the same discount; that at your port the steel rods, polished or tempered, No. 4 wire gauge, are assessed for duty under paragraph 136 of the act of July 24, 1897, at three-fourths of 1 cent per pound and one-half of 1 cent per pound additional for tempering, and under paragraph 141 at one-fourth of 1 cent per pound additional for polishing, making a total assessment of 1½ cents per pound; and that the polished steel wire, untempered, Nos. 10 and 11 wire gauge, is subjected to duty under paragraph 137 at 40 per cent. ad valorem.

At the port of New York, similar steel wire drill rods, No. 4 wire gauge, are classified and assessed for duty as round, polished steel bars, at the rates provided under paragraph 135, which, on the goods in question, would be 4 7-10 cents per pound, plus one-fourth of 1 cent per pound in paragraph 141 for polishing; and the polished steel wire, untempered, Nos. 10 and 11 wire gauge, like that imported at your port, is assessed with duty at 45 per cent. ad valorem as clock or watch wire, under the first proviso in paragraph 137 of said act.

As it is the opinion of the Department that the practice at New York is correct under the law in respect to merchandise of the above description, you are hereby directed to cause the practice at your port to conform thereto, and to reliquidate the entries of the steel rods and wire imported into your port from Warrington, England, on November 14 and 21 and December 8 last, respectively, and to assess duty thereon at the rates last above mentioned, under paragraphs 135, 137, and 141, leaving the importers to their remedy by protest under section 14 of the act of June 10, 1890.

The Hussey-Truxall Steel Company.—The Hussey-Truxall Steel Company of Pittsburgh were recently granted a charter of incorporation, with a capital stock of $150,000, $50,000 preferred and $100,000 common, all of which, we are advised, has been fully paid up. This company have acquired the plant formerly operated by the Cold Rolled Steel Company, at New Kensington, Pa., which they have remodeled throughout, and in which they have installed considerable new equipment. Included in this new equipment is a modern rod mill, which is being built from the company's own designs, and which is expected to be ready for operation about February 15. The product of the plant will be merchant steel bars, wire rods and all grades of flat cold rolled material, either from Bessemer or open hearth stock as may be desired by the customer. The manager of the plant is E. Truxall, formerly with Phillips, Nimick & Co., Sligo Rolling Mills, Pittsburgh. The offices are located at 215½ Fourth avenue, Pittsburgh. The officials of the concern are as follows: C. G. Hussey, president; J. P. McCord, vice-president; Jos. S. Speer, secretary; O. P. Curran, treasurer, and E. Truxall, general manager.

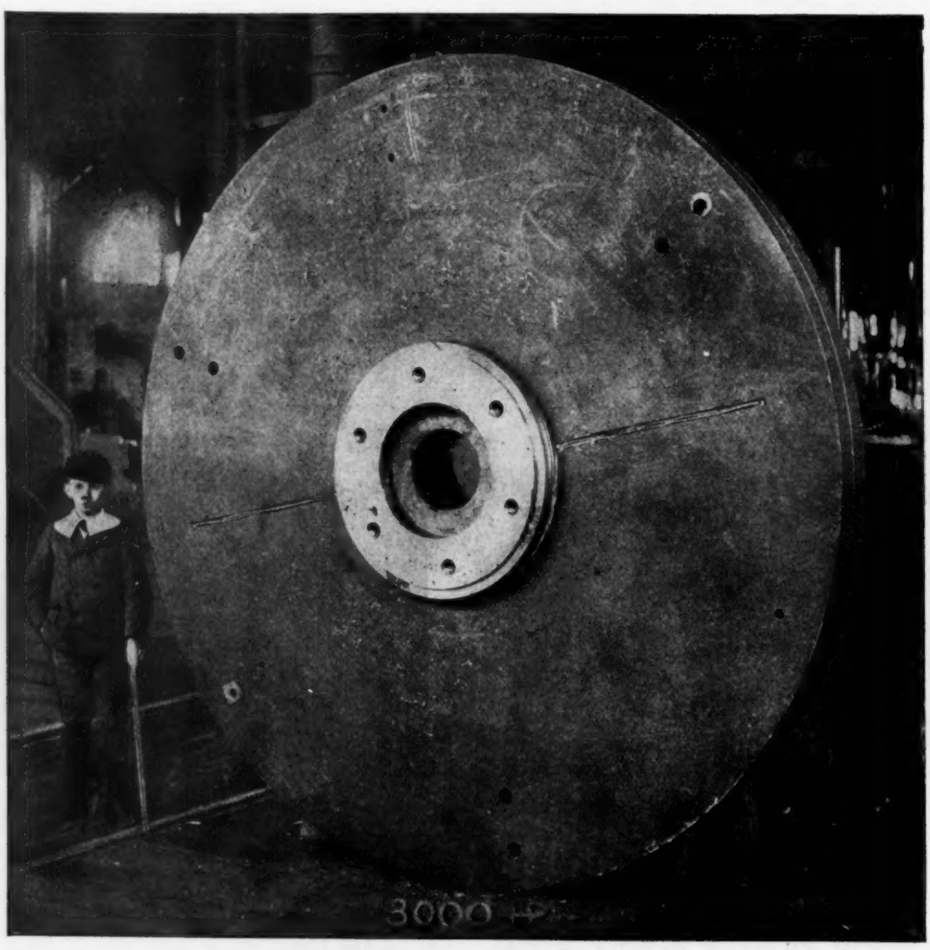
La Société des Laminoirs de Toula is the title of a company who have just been formed in Brussels, Belgium, under the auspices of the Société Me'allurgique d'Esperance Longdoz, with a capital of $1,000,000, to establish large rolling mills at Toula, Russia.

The Largest Magnetic Clutch in the World.

In the design of the modern electric power plant it is frequently found desirable to arrange the generators in such a way that they may be readily connected or disconnected to the prime movers according to the exigencies of the service. This requirement of successful power station design was early realized by Bion J. Arnold of Chicago, who recognized at the same time the limitations of the ordinary friction clutch for this purpose. Accordingly, some years ago, Mr. Arnold worked out a device which would meet modern requirements, and the result has been the development of the magnetic clutch, a number of which have already been built. These clutches are in reality friction clutches, yet the friction between the contact surfaces is not due to mechanical pressure, but to magnetic traction. The working parts of the clutches are composed of metal having a high permeability so arranged as to become magnetized upon the passage of direct current through the coils with which they are provided. The two parts of the clutch can be attracted together in this way with a pressure far in excess of that obtained in mechanical clutches, and it is only a question of making the clutches large enough to enable them to transmit power in any desired amount. The energizing circuit is controlled by means of a switch placed at a convenient point, which is quite a decided advantage over the ordinary friction clutch. It thus becomes possible in throwing a generator in or out of service to control it entirely from the switchboard, where all the regulating devices and measuring instruments are within the reach of one attendant. These magnetic clutches also possess the advantages of neat appearance and compact design. Even in the larger sizes the amount of space occupied upon the shaft is not much more than twice the diameter of the shaft, and by using a flange forged solid on the end of the shaft they can be made to occupy even less space when used as cut off couplings. Owing to their having no projecting surface or parts to catch the air when in operation the windage resistance is negligible. The greatest advantage of this form of clutch is the fact that it is self contained—the "action and reaction" being within the clutch itself, and consequently there is no resulting end thrust upon the shaft bearings and no additional friction load due to the operation of the clutch.

The illustration, Fig. 1, shows the largest magnetic clutch in the world. It is 100 inches in diameter, and is capable of transmitting 3000 horse-power at 150 revolutions per minute. This clutch is one of three now in use connecting the engines and generators in the central station of the Imperial Electric Light, Heat & Power Company at St. Louis, a view of the equipment of which is shown in Fig. 2. The experience with this plant demonstrates that this form of clutch is applicable to the large size units now being installed for power station purposes, whereas the ordinary friction clutch becomes especially unwieldy and unsightly after passing the 500 horse-power size.

There seems to be no reason why a clutch of the type shown in the illustration cannot be substituted for the fly wheel of the engine in many cases, thus making the weight and cost of the engine unit, fitted with magnetic clutches, but little more than the weight and cost of the small installation fitted with ordinary mechanical couplings.



THE LARGEST MAGNETIC CLUTCH IN THE WORLD.

The current is carried to the clutch coils through contact rings upon the side of the clutch and carbon brushes held by insulated brush holders. The electrical connections are simple and easily accessible for inspection.

The unique feature of this clutch is the small amount of current needed. It requires no more than would be used by four 16 candle power incandescent lamps, and the loss in the clutch due to the continuous use of the electric current while the clutch is in operation amounts to only a fraction of 1 per cent. of the power transmitting capacity.

Although these clutches were developed for use in connection with the "Arnold System" of power station construction, their application is in no way limited to the demands of this system, and they have been adapted and adopted for other purposes. A number have been made to connect large synchronous motors to their load in such a way that they can be quickly disconnected in case of accident, and they have also been built for use upon line shafting. It would seem that they were particularly applicable to use in connection with gas engines. They might eliminate the fly wheel problem of

the gas engine in many cases, which of itself would be a distinct advantage.

The Department of Commerce and Industries.

WASHINGTON, D. C., January 30, 1900.—The Sub-Committee of the Senate Committee on Commerce, having under consideration the pending bill providing for the creation of a Department of Commerce and Industries, made a favorable report to the full committee on the measure during the past week by a unanimous vote, thus demonstrating that the proposition is regarded as wholly non-partisan and is likely to be supported in both houses by Democrats as well as Republicans. This unexpected development makes it appear altogether probable that the bill will be passed by both houses in the present Congress and that the new department will be in full operation before the end of the next fiscal year.

The sub-committee, of which Senator Nelson is chairman, had made on exhaustive examination of the history of the creation and development of the Executive Departments and presents a very interesting summary of these researches.

"It appears," says the report, "that the Government first started out with only three Executive Departments—namely, the State, War and Treasury, and in connection with these Departments for administrative purposes, there was a Postmaster-General and an Attorney-General, neither of whom, however, were members of the Cabinet. The Executive business of the Government was conducted under these five heads until 1798, when the Navy Department was established, which withdrew the naval affairs from the War Department. In 1849 the Interior Department was formed by absorbing the Patent business from the State Department, the Land Office business from the Treasury Department, Indian Affairs from the War Department, Pensions from the War and Navy Departments, and Census from the State Department."

It will be seen from the foregoing that the Government in 1798 really distributed the public business among five distinct branches of the Government—practically five departments, the State, War, Treasury, Post Office, and Department of Justice. It is true that in the two last cases, that of the Post Office and the Department of Justice, they did not become full-fledged departments until a much later day, but the foundation of the postal business was assigned to the Postmaster-General and the judicial business to the Attorney-General as separate and distinct branches of the public service at that early day. As a practical question, then, there has really been only an addition of two departments, that of the Interior and Agriculture, within a period of 111 years. It will be observed that the Interior Department naturally and inevitably arose from the extraordinary accumulation of public business in the other departments of the Government. The two great departments of the public service, if we take into account the different classes of public business involved and the number of employees, are the Treasury and Interior Departments. The business of these departments has expanded to a large and varied extent. If we look at the number of employees in the respective departments here at Washington we find the condition to be as follows:

"There are in the Department of Justice 141, Navy Department 224, State Department 95, Post Office Department 697, Agriculture Department 804, War Department 1787, Interior Department 4440, and Treasury Department 4881 employees. From these figures it appears that both the Interior and Treasury Departments have each a greater number of employees than all the other departments of the Government combined.

"If we look at the duties assigned to each of these respective departments, we find that, outside of the Treasury and the Interior Departments, the other departments are mainly charged with a distinct class of public business, the State Department with foreign affairs, Department of Justice with judicial affairs, Navy Department with naval affairs, Post Office Department with the postal business of the country, War Department with the military affairs and the improvement of rivers and harbors, and the Agricultural Department with agricultural matters. But, when we come to the Treasury and the Interior Departments, we find that each of these departments is vested with a large number of separate and distinct public affairs disconnected with each other.

"The Treasury Department especially stands charged with a variety of diversified duties and subjects. It has charge of all the fiscal and monetary affairs of the Government, including the issuance and maintenance of a safe and sound currency; the collecting and disbursement of the revenues of the Government; the auditing and paying of all public accounts and claims in the several departments of the Government; the public debt and the coinage. In addition to these offices, divisions and bureaus, which all pertain to the financial and fiscal affairs of the Government, this Department has charge of the following bureaus, offices and divisions of the public service: The Supervising Architect, Bureau of Statistics, Life Saving Service, Commissioner of Navigation, Office of Steamboat Inspection, Light House Board and Light House Service, Coast and Geodetic Survey, Marine Hospital Service, Bureau of Immigration, and Commissioner of Immigration and Bureau of Foreign Commerce.

"It is apparent that none of these branches of the public service have any immediate or direct connection with, or are germane to, the principal and most impor-

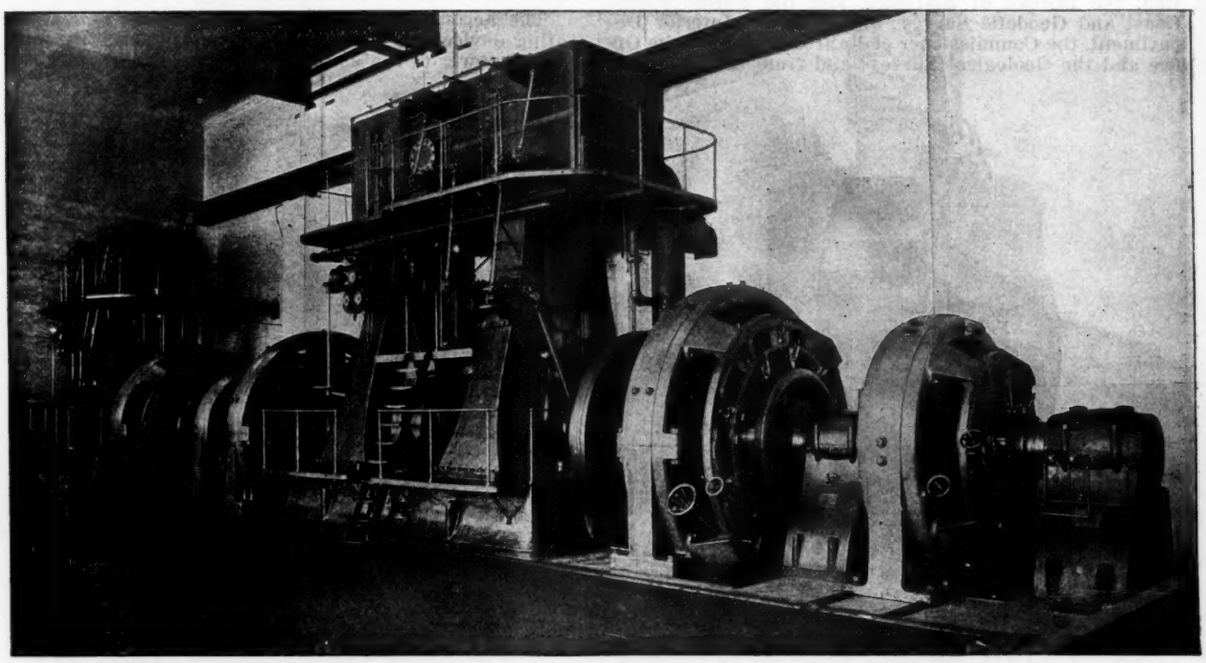


Fig. 2.—View Showing Location of Clutch on Engine Shaft.

THE LARGEST MAGNETIC CLUTCH IN THE WORLD.

tant duties of the Treasury Department. This Department stands charged, chiefly and first of all, with the financial and fiscal affairs of the Government, with all that pertains to finance and revenue, and ought not to be charged with duties foreign to these subjects. These other branches of public service, which lie outside of the subject of finance and revenue, pertain more directly to the subject of commerce. manufacture and other industries.

"The bill now under consideration is framed for the purpose of creating a new Department vested with all the branches and departments of the public service relating and germane to the subject of commerce, manufactures and other industries. It establishes in the proposed Department a new bureau to be known as the Bureau of Manufactures, to have charge of the manufacturing interests of the United States, to gather, compile and publish information in respect to the same, and information in respect to securing markets for our products abroad, and to assist in developing the manufacturing industries of the United States and the markets for the same. It transfers to this new Department, from the Treasury Department, the Life Saving Service, the Light House Service, the Bureau of Navigation, and the United States Shipping Commissioners, the Bureau of Immigration, the Bureau of Statistics, and the United States Coast and Geodetic Survey; and from the Interior Department, the Commissioner of Railroads, the Census Office and the Geological Survey; and from the State Department, the Bureau of Foreign Commerce, and consolidates that with the Bureau of Statistics, transferred from the Treasury Department, and in connection with such transfer and consolidation, it requires that copies of all consular reports, not relating to diplomatic affairs, be transmitted to the new Department. It transfers the Geological Survey from the Interior Department to this new Department, and makes the Director of the Geological Survey the Chief of a Bureau of Geological Survey and Mining Industries. And it also transfers the Department of Labor and the Office of the Commissioner of Fish and Fsheries, neither of which belong to any of the great executive departments, to the new Department. It will readily be perceived from a mere inspection that the bureaus, departments and branches of the public service thus transferred to the new Department are all intimately connected with and directly pertain to the subject of commerce, manufactures, and the other industrial enterprises committed to the new Department."

The Senate Committee on Commerce is believed to favor the passage of the amended bill as reported by Senator Nelson, the chief addition to the original measure being the Bureau of Manufactures referred to, and an effort will be made to secure a report to the Senate at an early date. The administration is understood to favor the proposed Department, which it is believed with efficient management will be able to accomplish much for American manufacturers, especially in the direction of extending foreign markets. W. L. C.

The Neville Island Plant.—Several contracts have been awarded for the construction of a terminal railway of the American Steel & Wire Company, on Neville Island, Pittsburgh, and work on the construction of the line will be commenced soon. The railroad will be about 15 miles long, and will completely skirt Neville Island on both sides. It will be known as the Pittsburgh & Ohio Valley Railway, and will be capitalized at $1,000,000. It is the intention of the American Steel & Wire Company to push work on the construction of the road as fast as possible, so as to have it ready for operation in the summer. The island is practically level, and no heavy grading is necessary, except at a few points. The road will be operated by the American Steel & Wire Company the same as the Union Railroad is run by the Carnegie Steel Company, Limited, and the Monongahela Connecting by Jones & Laughlins, Limited. Work on the excavation for the new blast furnace of the American Steel & Wire Company, on Neville Island, is being pushed at fast as possible, and it is expected this furnace will be built in record breaking time. As already noted, ground has been laid out for six, and as soon as the furnace now under way has been completed it is likely Edith will be removed and rebuilt on Neville Island alongside the new stack.

The Boston Compensating Bevel Gears.

The accompanying engravings represent a compensating device used on motor vehicles for the transmission of power to the main axle. By use of this mechanism the power can be applied to each wheel at a different speed, as is necessary when turning a corner, in order to avoid all slipping of the rubber tires which, with the wheels running at the same speed, would soon be destroyed. The regular construction of this device by the Boston Gear Works, Boston, Mass., consists of two bevels and three pinions. The cut, Fig. 2, illustrates six pinions, a type furnished for heavier carriages. The device consists of a duplicate set of bevel gears, which engage with central bevel pinions carrying the sprocket wheel. The cut, Fig. 2, shows of course only one side. The gears are independent of each other and are secured respectively to hollow shafts, and are driven by the bevel pinions. These bevel pinions are loosely mounted on studs carried by the sprocket wheel. When power is applied to the sprocket it is equally distributed to the bevel gears by means of the pinions. When one gear offers more resistance than the other, as in the case of the vehicle turning a corner, it is obvious that the pinions can adjust themselves according to the resistance offered, and the rubber tires are not therefore injured.

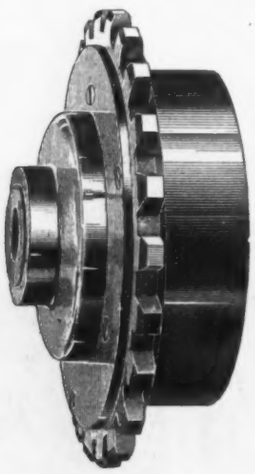


Fig. 1.

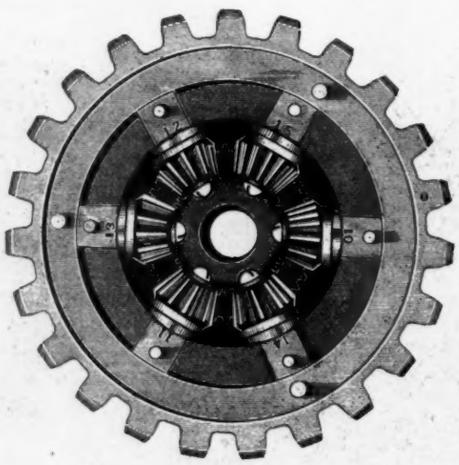


Fig. 2.

THE BOSTON COMPENSATING BEVEL GEARS.

The statement comes from Iola, Kan., that the long delayed charter permitting the Lanyon Zinc Company to do business in Kansas had been granted. Eastern stockholders had refused to build a zinc rolling mill and sulphuric acid works until the charter question was settled. The rolling mill will be erected this spring, the president of the company says, at a cost of $100,000, and will employ 200 men. It will have a capacity of 20 tons daily and among other things will make zinc shingles, heretofore little used on account of their cost. The sulphuric acid works, intended to consume the waste product of the smelters, will be built later.

The Watson Radial Water Tube Boiler.

The illustrations show the Watson radial water tube boiler; "radial" because the tubes all radiate from a common center. It is supposed to be new, and is, in so far as it combines old and well known details in a new form, but there are no novelties in it, with one exception, and that is the diaphragm, which is seen in the unfinished view, Fig. 2. This detail makes the boiler very efficient, for reasons that will appear further on. As may be observed, the boiler is very compact without being crowded in any part, and is less than half the weight of a fire tube boiler of equal rating. There is nothing whatever inside the boiler, neither stay bolts nor braces of any kind, and being made wholly of steel it takes care of itself as regards expansion and contraction. It requires no setting or masonry and is ready for steam when received. It is built, as to scantlings, from the United States Treasury rules as embodied in the manual of the Bureau of Steamboat Inspection Service, and is passed by them as A1 for whatever pressure it is made for; that is, from 225 pounds per square inch down, but 312 pounds live steam per square inch has been put upon these boilers without their showing weakness. It may be thought by some that this is a very high pressure to put on a rough joint just as it was flanged, 30 to 49 inches in diameter by 2 inches face. The steel bolts are ¾ to 1 inch diameter and the joint plates are 5-16 to ½ inch; the bolts are 2 inches, center to center, and not one of them leaks when properly made. The large powers of these boilers are riveted on the bottom joint. This is a characteristic of the whole boiler; it is iron and iron throughout; all holes are drilled and all bolts driven. The tubes are driven tight in the tube sheets and expanded by very few turns of the tool. The tubes have been set at the rate of 200 per day of ten hours by hand—not power. The steel for the plates has a tensile strength of 60,000 pounds, and the aim has been to so design the structure as a whole that the stresses are evenly distributed. There are many tons pressure on the dome head and water bottom with high steam tending to blow them apart, but it has a factor of safety of six, and tests have proven that it is not possible to injure the boiler by any pressure it can attain in practice.

The plan of the boiler is so well shown in the engravings that no explanation is needed. It is simply a cone of tubes around a central furnace, with a baffle plate, or permanent damper, just under the throat of the smoke tube. This plate checks the direct upward flow of the gases and diffuses them through and around the tubes. The tubes can be renewed when worn out, or any tube taken out by raising the dome, a matter of from one to three hours.

Before putting this boiler on the market it was run for several months in actual work in a shop where its faults and virtues could be discovered. A pailful of loam was put in a 15 horse-power boiler in order to see what effect dirty water would have upon it. It was found, as was expected, that the dirt was immediately precipitated to the water-bottom, where it could be easily removed by the hand holes or blow cock, and that while the gauge glass was full of muddy water the steam was dry; no foaming took place. The water line does not fluctuate or oscillate. One reason for this is that the water content—that is, the weight of water compared to the weight of the boiler—is large, and affords a reservoir for steam held in suspension for emergencies. It takes a long time to blow the pressure down below a given point. Long after the dome has been blown out the heated water in the bottom continues to give forth steam.

The office of the diaphragm, shown on the left side of the boiler, Fig. 2, is to set up and maintain a circulation. As may be seen, it is simply a sheet of steel extending from bottom to top all around, shutting off the outer row of tubes from the inner tubes. When a fire is started the water rises in the tubes next to the fire; as it rises in the inner tubes it flows over and falls in the outer course, and in this way a constant natural circulation is maintained as long as there is fire in the boiler; by placing a hand on the water bottom the hot water can be felt coming down the tubes in a very few minutes after the fire is started. It takes about ten minutes to generate steam and 20 minutes to get up 150 pounds; 250 pounds have been generated in 35 minutes from the time of starting the fire with water at 40 degrees.

Fig. 1.

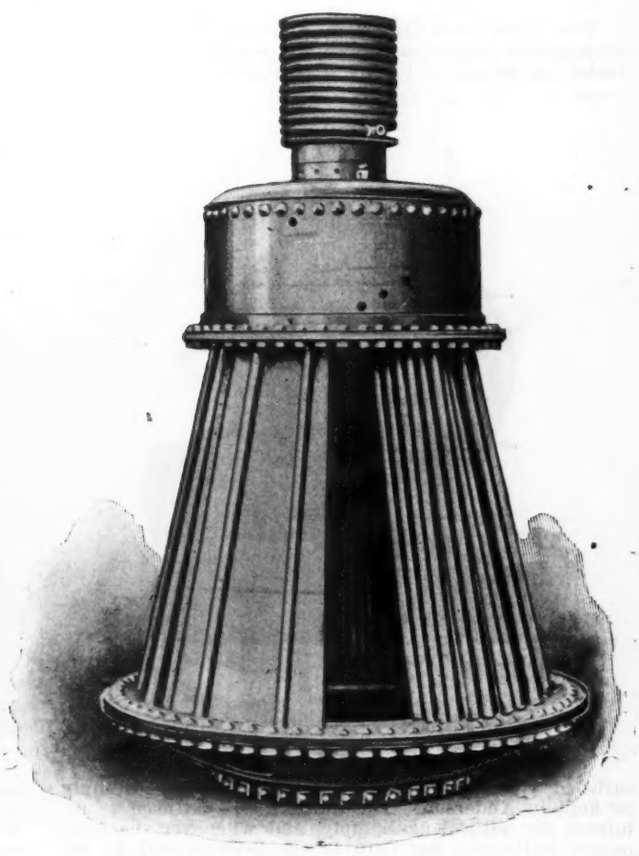


Fig. 2.

THE WATSON RADIAL WATER TUBE BOILER.

The boiler shown is one built to order for a private electric light plant, and has extra finish in jacket and fittings generally. It is rated at 15 horse-power only, but its actual capacity is higher. The hight is 5 feet 6 inches over the dome, widest part 47 inches, and weight, empty, 1600 pounds. It is to carry 100 pounds pressure, but has been tested to 200 pounds. Upon trial it maintained 100 pounds steam pressure, on not exactly the run of the mine coal, but a lot of fuel that was swept up around the yard; this after the fire had been started with good coal, however; the pressure held at the blowing off point with the door open in winter weather for over one hour, the boiler itself being outdoors. This was done with a stack only 4 feet high.

The limit of sizes at present is 100 horse-power, through want of shop facilities to construct them, the practical limit being 325 horse-power and 225 pounds pressure. Such a boiler would require a 72-inch fire grate, which is as large as a circular grate can be properly fired. This 325 horse-power boiler would be only 12 feet high over dome by 9 feet at base. These boilers are built by Egbert P. Watson, Elizabeth, N. J., and are patented in the United States and foreign countries.

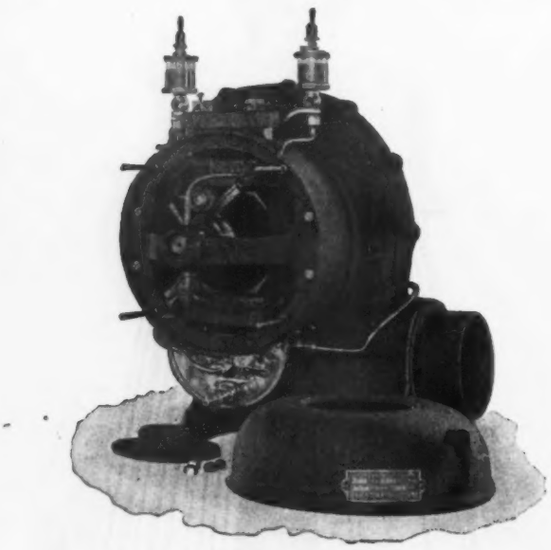
The Gould Steel Company, Anderson, Ind., have concluded their experiments with the patent oil burners put under the boilers in the plant two months ago, and are satisfied with the results. The plant will accordingly be kept in Anderson. The burners will be used to reinforce the natural gas supply, and whenever the company's wells give out entirely the burners will be depended upon entirely. The fuel used is crude oil, which is not so cheap as natural gas, but almost so when the plant required for a natural gas supply is taken into consideration. It is much cheaper than coal. Other local manufacturers have manifested an interest in the experiments at this plant and are well satisfied.

The Morse Iron Works & Dry Dock Company of Brooklyn, N. Y., were incorporated last week with a capital of $550,000, by Edward P. Morse, Charles G. Street, Wm. A. Turner, and Wm. L. Chapman, Brooklyn, and Lemuel M. Hooper, Rutherford, N. J. According to a statement of Mr. Morse, the company will build a dry dock 800 feet long from First Avenue, Brooklyn, to the channel along the water front at Bay Ridge. The dock will accommodate vessels of any size and will be ready in November. A large machine shop will also be built.

Statistic published in a Denver paper show that the production of the Colorado Fuel & Iron Company in 1898 and 1899, respectively, was 99,401 net tons and 107,820 net tons of pig iron, 2823 and 4692 net tons of spiegeleisen, 82,447 and 82,469 net tons of steel rails, 1533 net tons of plates during the last three months of 1899, 22,297 and 32,509 net tons of merchant iron, 6979 and 8458 net tons of castings, 819 and 8016 net tons of cast iron pipe, 5935 and 9379 net tons of spikes, bolts and nuts, and 224,813 and 247,395 net tons of iron ore.

An Electric Fan With Direct Connected Inclosed Motor.

A new type of electric fan with direct connected inclosed motor has been constructed by the B. F. Sturtevant Company of Boston. The field ring of the motor, which is of wrought iron, is attached to the side of the fan, and forms a part of the inclosing frame of the motor. Within this frame is placed a cradle or double yoke, carrying two ring oiling bearings, which are self adjusting, and necessarily are kept in constant alignment. This cradle is clearly shown in Fig. 2, and is held in place by four bolts, as indicated in the side view of the fan. The armature shaft is of large diameter, carrying the fan wheel upon its extended side, and projecting through the casing of the fan itself. The armature is of the drum type, and the commutator constructed of drop forged segments. Carbon brushes are used, with self feeding and adjustable holders of the socket type. A cast iron hood or casing with removable center is employed to inclose the entire motor, which is thus kept free from dust. A fan of this type, being small in size, and therefore readily portable, is serviceable for all purposes where a movement of air is desired, while the inclosed feature of the motor makes it possible to operate it in a dusty atmosphere. Sight feed oil cups supply oil to the bearings, and the overflow therefrom passes to a tank suspended beneath the frame, whence it may be removed at intervals.



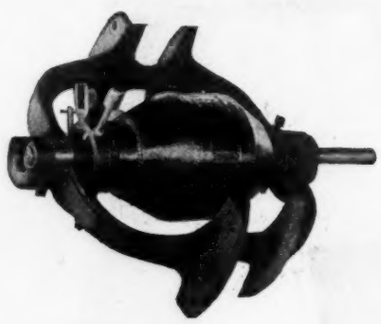


Fig. 2.—The Cradle or Double Yoke.

AN ELECTRIC FAN WITH DIRECT CONNECTED INCLOSED MOTOR.

Central Pennsylvania News.

HARRISBURG, PA., January 29, 1900.—H. H. Campbell, general manager of the Pennsylvania Steel Company, has posted the following notice:

"On March 1 there will be an advance of about 10 per cent. in the wages at this works. We are running on low price orders, left over from last year, but by March 1 these orders will nearly all be filled, and it is felt that all should share in the general prosperity as all shared in the general adversity."

It had been rumored for some time that an advance in wages would come about the first of the year, but when the new year came and no notice of an increase was given the men became somewhat discouraged. Last spring the previous cut in wages was restored and the March increase will be a distinct advance over the former wages.

This week the local industrial statistician has been at work and the results are interesting. He has made a comparison of the number of men employed and the wages paid four years ago with the conditions to-day in Harrisburg and vicinity. He finds that in August, 1896, the total number on the payroll of the Pennsylvania Steel Works was 3988, and last month 6672; wages paid in August, 1896, $125,000; for December, 1899, $240,000. In 1896 there was a 10 per cent. reduction in wages and the men were working half time, quarter time and even less time, but since then the cut in wages has been restored, and an advance of 10 per cent. on March 1 has been announced. At the Lalance-Grosjean tin plate plant four years ago the men were not working more than half time; to-day they are working day and night and are unable to keep up with the orders. In 1896 the Harrisburg Rolling Mill Company employed 225 men and paid out in wages monthly $6908.18; to-day the same company have on their payroll 400 men, and the average monthly pay is $18,300.16. Four years ago the Central Iron & Steel Company had closed their branch at Herr street, but to-day the same branch is in operation and employing

125 men at increased wages. At the main plant of the same company four years ago the men employed made less than half time at low wages; to-day 800 men are regularly employed day and night at increased wages. In 1896 the Foundry & Machine Company employed 180 men and paid weekly about $1500; to-day the company are running two plants with several hundred men steadily employed at a weekly payroll of $4500. The statistician also refers to the remarkable improvement in the labor question as affecting the railroads centering here. The railroad employees have been largely increased in all the departments of the roads located here and work less time for more money.

The Pennsylvania Steel Company have booked an order for 25 bridges for the West Virginia Short Line Railroad Company amounting to 2500 tons. Owing to the unprecedented rains and floods which occurred during November and December the erection of the Gokteik via-

THE WEISS MOLDING MACHINE.

duct on the Burmah railways in India has been considerably delayed. The steel traveler has now been erected, however, and while the floods interfered with the delivery of steel to the bridge site for two months after the company were ready to start its erection the present prospects are favorable for a vigorous prosecution of the work. Joseph Knight of this city, who is one of the constructing force sent to India, writes that the first steamer with materials for the great viaduct arrived at Rangoon on October 26. A week later a frightful washout occurred on the railway, destroying 8 miles of road.

The American Tube & Iron Company will resume operations at the Middletown plant in a few days. These works have been closed during the month of January for inventory and repairs. It was reported that the tube combination intended to abandon the Middletown plant, but this is declared by an officer of the company to be absolutely groundless. About 1300 men are employed at the works when in full operation.

Several mills of the Susquehanna Iron & Steel Company at Columbia, which have been idle more or less during January, will resume operations this week. A large number of stockholders of the Susquehanna Company favor the erection of a proposed pipe mill to cost $600,000, but they are strenuously opposed to the absorption of the company by the Atlantic Iron & Steel Company.

While the iron and steel market appears to be dull in certain quarters there is still confidence among manufacturers that the present listless condition is the result of uncertainty as to prices. They believe that the next two weeks will bring about a change which will result in the placing of many orders that are now held in abeyance, waiting the settlement of prices. The iron and steel men of this district believe that there will be plenty of work the balance of the year, but they look for a short period of uncertainty. S.

The Weiss Molding Machine.

The Maywood Foundry & Machine Company, with offices at 507 Monadnock Building, Chicago, and works at Maywood, Ill., have brought out the Weiss molding machine illustrated. It is of the portable type and requires no installation to operate it, as in the case of power machines. The construction is such that it can be adapted to a variety of patterns. The changes from one set of patterns to another are made by simply removing the screws from the top of the four guide posts which support the stripper plate, and the four screws in the corners of the pattern plate, after which the plate and pattern may be lifted off and another put on. Skilled labor is not required for the work. The movable portion of the machine which carries the pattern is held in place by four rigid guide posts at the top and a fifth central guide at the bottom. The pattern is thus firmly held in position and cannot work loose and wear against the stripping plate. These guide posts serve the double purpose of guiding the pattern plate and supporting the stripping plate. This compact construction leaves the entire machine open and easy of access for the purpose of setting stools. A compression spring relieves the machine of all shock or jar in dropping the pattern. This is an important feature as such shocks are liable to cause molds to fall out. After the pattern has been raised into position through the stripping plate it has no downward motion, but is firmly held there. The adjustment of the pattern through the stripping plate is effected by simply turning a single adjusting screw. This adjustment may vary from the smallest fraction of an inch up to any required depth of draw.

The Burnham Bench Drill.

The new bench drill built by the Geo. Burnham Company of Worcester, Mass., is designed for all classes of light drilling up to ⅜ inch. The construction will be

THE BURNHAM BENCH DRILL.

understood from the engraving. The drill is extremely sensitive and has two changes of speed. It will drill to the center of a 7¼-inch circle. The spindle is ¾ inch in diameter and has a movement of 2⅝ inches. The swinging table is 6½ inches in diameter and has an adjustment of 8 inches. The greatest distance from this table to the chuck is 7 inches and from the lower table to the chuck 12 inches. The hight over all is 26 inches and the space occupied 7 x 18 inches.

At a conference held in Pittsburgh last week between the representatives of the Amalgamated Association and the Iron and Steel Sheet Manufacturers' Association sales sheets were gone over, and it was found that sheet mill hands were not entitled to any increase in wages for January and February. No increase was expected owing to the dull condition of the sheet trade and the low prices for some time past.

A press dispatch from Hurley, Wis., states that the Ashland Mining Company are shipping about 50 carloads of ore a day to the Illinois Steel Company at Joliet, at $5.25 a ton on board cars. The Carey mine will commence shipping to Mayville about February 1, and the Hennepin mine at Pence will begin shipping to Joliet about the same time.

Alfred Giles of San Antonio, Texas, will receive bids until February 13 for the construction of a $100,000 steel building for the Bank of Coahuila, Saltillo, Mexico.

The Yankee Drill Grinder.

The problem of grinding twist drills mechanically correct is a more intricate one than is usually supposed. The designers of the grinder here shown—the Fuller Mfg. Company, successors to the G. T. Eames Company of Kalamazoo, Mich.—have approached the subject along geometrical lines, and have embodied in the design of the machine itself all lines and angles that are usually brought into proper relation with each other only by constant adjustment. The V holder of this machine swings upon a journal positioned back of the grinding face of the wheel, and the axis of the journal, if extended upwardly, would pass through the body of the wheel and intersect the apex of the holder substantially at the grinding surface of the wheel. Consequently a small drill resting in the bottom of the holder would have its point near this imaginary line, and the cone upon which the cutting end of the drill is ground would be very small, as the circle that it swings on at that point would also be circumscribed.

The angles of the V sides of the holder are formed in such relation to this axial line of oscillation that as drills

THE YANKEE DRILL GRINDER.

increase in size they must rest further above the apex of the holder. When in position to grind their points will be thrown further ahead of this imaginary line just in proportion to their increase in size. Therefore the lines upon which the machine itself is constructed become its own adjusting device, which automatically accomplishes the results sought. It may also be readily observed that by the proper arrangement of these angles and lines in relation to each other drills of different sizes automatically find their places in just the proper position to be ground mechanically correct. A small drill cannot possibly occupy the place of a large one, and *vice versa*.

The preliminary adjustments required to set the machine to grind a drill of any size within its range are therefore reduced to barely one, and this one only consumes a second or two of time. The operation is as follows: Drop the drill into the V holder and bring up the tail stock to suit the length of the drill. Thus is the process necessarily shortened to a minimum. It will also be seen that this arrangement does away with the necessity of safety stops or of any danger of marring the lip rest while the machine is in use, as the holder is never moved except to follow up the wear of the wheel. Another new feature is the variable clearance device. By loosening the hand wheel beneath the bottom of the holder it may be adjusted upon its curved bearing by means of a clearance screw not visible in the cut. This adjustment gives any angle of clearance to the cutting edge desired, and, as may be readily understood, the same angle of clearance holds good upon every size of drill within the range of the machine (⅛ to 2¼ inches) without resetting. This is due to the fact that the curved seat in which the holder rests is struck from the apex of the holder itself.

The Reciprocity Treaties.

The Probability of Their Abandonment.

WASHINGTON, D. C., January 30, 1900.—There is high authority for the statement that the seven pending reciprocity treaties have been practically abandoned by the administration and the majority leaders in both Houses of Congress, and that if not formally rejected they will be permitted to fail under the terms of their negotiations. This statement is based upon two important developments of the past week, which indicate that the prospect of the ratification of the treaties is so remote as to be hardly worth further consideration.

Representatives of the administration in the Senate, including Senator Hanna, and prominent members of the Finance Committee, including Senators Aldrich, Burrows and others, have announced to their colleagues during the past week that the treaties as framed will injure American interests far more than they will help them. The influence of these Senators is so potent that their opposition means the certain death of the conventions, especially in view of the fact that a two-thirds vote is necessary to their ratification by the Senate. The other development referred to is equally significant in view of the rules of the Senate which permit unlimited debate, and comes in the shape of a semi-official statement from the State Department to the effect that, with the exception of the treaty relating to the trade of Barbados, the pending conventions will expire by limitation unless they are ratified on or before March 24. This means that if the opponents of these measures can prevent a vote for 60 days the treaties will require to be again submitted to the negotiators in order to give them a new lease of life, and under the circumstances it is believed that neither the French Government nor the American administration would be prepared to revive them.

The convention with France was concluded on July 24, 1899, and requires to be ratified within eight months of its date, which sets a limit of March 24 as the life of the convention. Similarly the treaty with the Argentine expires within the next fortnight, or on February 10; that with British Guiana on March 18; Turks and Caicos Islands, March 21; Jamaica, March 22; Bermuda, March 24; and Barbados, June 10. The early expiration of the convention with the Argentine is of special importance, as that treaty is one of the most objectionable to the agricultural interests of the Middle West and South.

The defection of the majority leaders in both Houses from the policy of reciprocity has caused general consternation among the friends of the treaties. The advocates of early ratification have counted upon a practically solid Democratic opposition because of the recognized policy of the minority, which, ever since the passage of the McKinley act, has been against the reciprocity principle. The friends of the treaties, however, had hoped to secure a few Democratic votes in the Senate to make up the necessary two-thirds, and had counted upon the solid support of the Republicans in both Houses. Although the Republican majority in the House is small it is sufficient for the passage of any party measure, and in the case of the reciprocity treaties a bare majority vote would suffice, as a two-thirds vote is required only in the Senate for formal ratification.

The Argentine Treaty and Wool.

Recently, however, such pressure has been brought to bear upon prominent majority Senators from both East and West that declarations in opposition to the treaties have been forced from several who have heretofore been counted upon as the supporters of the administration's reciprocity policy. As heretofore intimated in these dispatches, the strength of the opposition to each of these treaties lies in the fact that a combination has been effected among the opponents of all of them, and in this connection the opposition to the Argentine treaty has been most potent in its influence in antagonism of the French treaty. The wool growers of the West have been heard from because the Argentine treaty provides for a reduction of 20 per cent. on raw wool. The character of this opposition and the influence it has exerted upon leading Republican Senators may be gathered from the following frank statement of Senator Warren of Wyoming, who has hitherto been regarded as a supporter of all the conventions:

"The importation of Argentine wool at a reduction of 20 per cent. from a duty which was enacted into law after a thorough consideration of all conditions would be ruinous to Wyoming and all the wool growing States of the Union. The Argentine Republic is practically our chief competitor. It has twice as many sheep as the United States. It is the second country in the world in point of production, and will soon be first, as its output is increasing raidly. Its wool growers are also alive to the importance of improving the quality, and as high as $5000 has been paid per head for animals of fine breed. This fact must not be forgotten, because hitherto Argentine wools were of poor quality. It is strange that under these conditions 20 per cent. reduction be granted on wool when other articles are reduced from 5 to 10 per cent. It must be remembered, too, that Argentine levies an export duty of 4 per cent. on wool.

"The wool manufacturers are benefited, though it is not proven that they are asking this concession, and that is the unfairness of the whole proposition. Wools and hide are the finished product of the Western agriculturist, and are not marketable until much money and time have been expended in their production. Notwithstanding this the wool and hide producers are compelled to meet this 20 per cent. reduction, while the manufacturers do not suffer from any reduction whatever on the imported manufactured article. This is a tremendous discrimination in their favor. There is still another factor which must not be overlooked. Our treaties with Great Britain give her equal advantage with those which we grant to the most favored nation. If we should ratify the Argentine treaty—which, in my opinion, will not be done—what will prevent Great Britain from demanding the reduction on wools from Australasia which we grant to Argentine? I think this is a matter which demands very careful consideration. In addition to all this wool is, in my opinion, the keystone of the arch of our protective system and ought not to be attacked."

It will be noted that Senator Warren raises the point suggested in these dispatches several months ago that the "most favored nation" clause in our treaties with other countries might be invoked by them to compel similar reciprocal concessions in the event of the ratification of the pending treaties. Italy and Germany are understood to be watching the treaties with great interest in the hope that a way may be found for the admission of wines and manufactures of metals at lower rates of duty, while the diplomatic representatives here of other countries are closely watching the progress of the various conventions because of the bearing they may have upon the exports of certain other products.

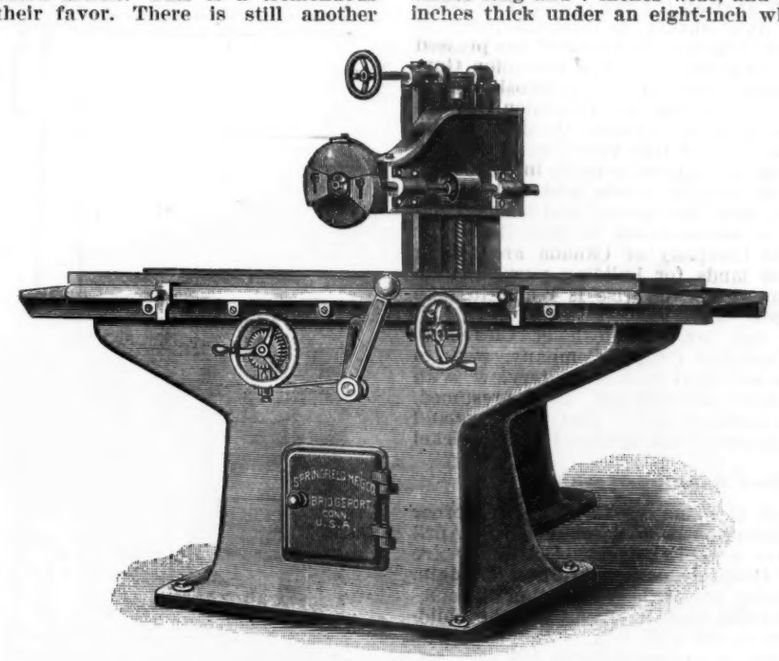
It has been realized for some time that the greatest danger menacing the treaties was likely to be developed in the Senate Committee on Finance, a sub-committee of which is now considering the effect of the ratification of the treaties upon the revenues of the United States. This committee was at first supposed to be favorable to all the treaties, though by a very narrow majority, hence the defection of one or two Senators is likely to prevent a favorable report by the sub-committee which is acting in an advisory capacity to the Committee on Foreign Relations, which has the custody of the treaties. The attitude of Senators Aldrich and Burrows and the position taken by Senator Hanna leave no doubt that the committee has no further interest in the treaties and that the Administration Senators are indifferent as to their fate.

The possibility of reviving the treaties after their expiration is regarded as remote. The French Government has not regarded the reciprocity convention as very favorable to French manufacturers, and many lines of trade have presented protests to the French Chamber of Deputies against the treaty. Within the past week hearings have been given by the Customs Committee of the Deputies to the iron and steel trade, and it has been represented that the concessions made to American manufacturers would seriously handicap home manufactures. Other interests are also arrayed against the treaty, so that in the event of its failure by expiration there seems to be little likelihood of its revival by the consent of both France and the United States.

W. L. C.

The Springfield Automatic Surface Grinder.

The Springfield Surface Grinder has a table 35 inches long and 9 inches wide, with a working surface of 20 inches long and 7 inches wide, and will surface work 6 inches thick under an eight-inch wheel. The travel of the table is automatic and it is easily changed to feed in either direction. The transverse movement of the wheel is also automatic and may be fed in either direction. The spindle, which is hardened steel, ground and lapped, runs in bronze boxes, and is provided with means of compensation for wear. It also has an oscillating attachment which may be quickly adjusted to oscillate or not as circumstances demand. When the spindle oscillates it gives the wheel a cross cut similar to draw filing, which not only serves to obtain fast cutting but a fine surface and retaining a uniform face on the wheel. The spindle has a No. 3 Morse taper hole in the front end and a polishing device may be used when desired. The wheel head is raised and lowered with a hand wheel and is also provided with a micrometer feed, admitting of exceptionally close work when desired. The table is driven by worm and rack, and by the use of a friction clutch the carriage may be stopped or started independently of the balance of the machine. The grinder occupies a floor space 30 x 70 inches, carries an emery wheel 8 x ½ inches, and weighs 2400 pounds. It is built by the Springfield Mfg. Company of Bridgeport, Conn.



THE SPRINGFIELD AUTOMATIC SURFACE GRINDER.

In a paper read last week before the New York section of the Society of Chemical Industry, Prof. Clifford Richardson stated that although the discovery of petroleum in Texas was made in 1894, the rapid development of the oil fields about Corsicana indicated that Texas might soon be a competitor in oil production with the fields in the Middle West. The analytical test of the product showed it to be richer in some respects than the more recent discoveries in California.

Canadian News.

Export Duty on Nickel.

TORONTO, January 26, 1900.—Apparently the question of an export duty on nickel ore and matte will be under the consideration of the Dominion Parliament in the session about to open. A sub-committee of the Cabinet has been appointed to look into the grounds on which the imposition of an export duty is urged. This sub-committee consists of Sir Richard Cartwright, Sir Louis Davies, Hon. W. S. Fielding, Hon. A. G. Blair and Hon. William Paterson. A meeting of these Ministers was held on the 24th inst. to consider the question. Sir Richard Cartwright and Sir Louis Davies are both members of the Joint High Commission and may be supposed to weigh the probable effect of such an impost upon the negotiations of that body. However, the fact that it is the Government which is initiating inquiry into the matter and not a private member of the House is more or less significant. It seems to mean that the representatives of the Ontario Government have been heard. It will be remembered that upward of two months ago the Ontario Government passed an order in Council, in which it was provided: 1, That the Imperial Government should be invited to join in developing Algoma nickel deposits for the benefit of the navy; 2, that the Dominion Government should be urged to impose an export duty on nickel ore and matte; and, 3, that all the ore raised from lands granted after that date should be manufactured in Canada. Evidently the Ontario Government has pressed the second point on the attention of the Dominion Government. As the famous Canadian nickel deposits are in Ontario, it may be presumed that the Dominion Government would feel warranted in imposing the duty at the instance of the Government of that Province. However, there are considerations of State to be taken into account. Now that the Clergue refining works and nickel steel works are to be built, now that a new and strong company are organized to refine nickel in Hamilton, now that the Nickel Steel Company of Canada are asking powers to expropriate lands for building purposes, the Government may feel that enterprise is ready to take advantage of an export tax.

Ex-Judge Burke and Mr. McIntosh of Cleveland, Ohio, both of the Canadian Copper Company, were in Toronto a few days ago and had an interview with members of the Ontario Government. It is presumed, in fact is alleged on good authority, that the Cleveland men made strong representations against the new nickel regulations.

Hamilton Refining Works.

It is expected that the zinc works of the Hoepfner Refining Company, Hamilton, will be completed by April 1. The company have a capital of $600,000. They are called after Dr. Carl Hoepfner of Frankfort-on-the-Main, who, in addition to being one of the directors of the company, is their chemist and chief engineer. Of the buildings the principal one is 236 x 55 feet, with two stories each 26 feet high. There is a roasting house 100 x 40 feet, a bleach house 54 feet square and a boiler house 40 feet square. All the buildings are of brick. A chimney 20 feet square at the base and rising 214 feet high is being erected. In these works the process to be used is the invention of Dr. Hoepfner. At Giessen he perfected a process for refining zinc and other ores by electrolysis. A license to use the process was sold to Dr. Mond, the inventor of the nickel process known by his name, and three years ago works were constructed near Chester with a capacity of about 1 ton of fine zinc per day. Since then the capacity of the plant has been greatly increased. Similar works have been constructed in Austria, and with some modifications the process has been applied to the refining of copper and nickel ore at Pappenberg in Germany.

Iron Works Near Ottawa.

Notice has been given that in this session of Parliament application will be made for the incorporation of the Ironsides Milling Company, with a capital of $100,000, for the purpose of developing the iron mine at Ironsides, near Ottawa. The old Forsyth property has been leased and a plant is to be installed. Upward of 150,000 tons of ore have been taken out in past years, and it is estimated that there are great quantities still there. The directors of the new company are C. B. Hibbard, J. O. Hibbard, Darcy Scott and W. H. Curle of Ottawa; W. L. Robertson and W. R. Hinsdale of New York, and J. L. Holmes of Detroit.

Trade Items.

An agreement has been entered into between the corporation of Toronto Junction and the representatives of certain capitalists for the establishment of works for the manufacture of mining machinery in the Junction.

The Canadian Locomotive & Engine Company, Kingston, have decided to go into liquidation. For some years the company have not been making money. A change in management was made about two years ago, and extensive improvements in the works have been made since then. The going of the company into liquidation will not affect the running of the works for some time. They have orders on hand which cannot be completed until next September, and in the meantime other work will be taken with the consent of the liquidators.

C. A. C. J.

The Kennedy Hot Blast and Chimney Valves for Stoves.

Julian Kennedy of Pittsburgh has just brought out designs of hot blast and chimney valves for blast furnace stoves. Referring to Fig. 1, the hot blast valve is

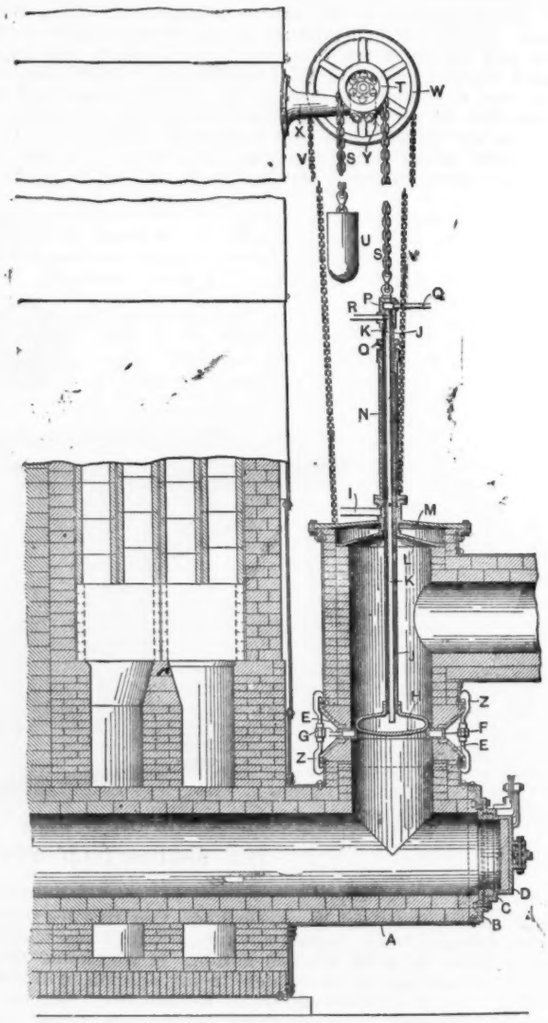


Fig. 1.—Section of the Kennedy Hot Blast Valve.

VALVES FOR HOT BLAST STOVES, DESIGNED BY JULIAN KENNEDY, PITTSBURGH, PA.

shown in section and employs the familiar Berg removable seat F. This seat is clamped between the two conical shaped steel castings E, which are brought together by clamps Z. These clamps are made with bronze nuts, having right and left hand threads, and may be removed entirely, giving perfect access for changing the seat. The principal feature of this hot blast valve, however, is that the stem may be kept perfectly tight, no leakage being evident after some years of use. The ordinary stuffing box is replaced by an extension, N, with a gland and soft packing, O; the stem itself is hollow and supplied with the usual inlet and outlet for water cooling. The pipe I is connected with the cold blast main, in which the pressure is always found to be about 1 ounce above that of the outgoing heated blast delivered by the stove. In consequence there is always a thin film of cold air passing down between the bored hole in the cover M and the sides of the

stem J, so that the light flocculent matter coming through the stove, and which is the principal source of injury to the valve stem, is prevented from passing up or around any portion of the stem which works through the gland and packing at O. The stem is thus packed under most favorable conditions, and is always cool and clean where it passes through the gland.

The Chimney Valve.—Referring to Fig. 2, the chimney valve is shown in section; the seat B has a water cooling pipe cast in in the ordinary way; the discharge from this seat is carried up by pipe D to the center of the cover G, where it discharges into a circular cooling space; this water overflows into a second and from there into a third cooling space, and wastes through pipe W. The valve C is cast of steel, and suspended by a solid stem, E. This stem is supplied with adjustable nuts and a soft washer at F, so that when the valve C is on its seat and the stove is on air, the soft washer will be sufficiently compressed to prevent leakage. When the stove is on gas and the valve is raised to its upper position it is kept cool by its close contact with the water cooled cover G. The valve and stem are both light, and when half way up are balanced by the weight P, so that if the valve is raised past the center the excess weight of the chain acting with weight P raises and holds the valve against the cover. When the valve and stem are dropped below the center of their travel the excess weight of the chain with the valve and stem allow the valve to drop and to remain on the seat.

These hot blast stove fittings have been adopted by the Carnegie Steel Company, Ohio Steel Company, Illinois Steel Company, Cambria Steel Company, and are being applied gradually to many other existing and new plants.

Trading in "puts" and "calls" has been forbidden on the Chicago Board of Trade.

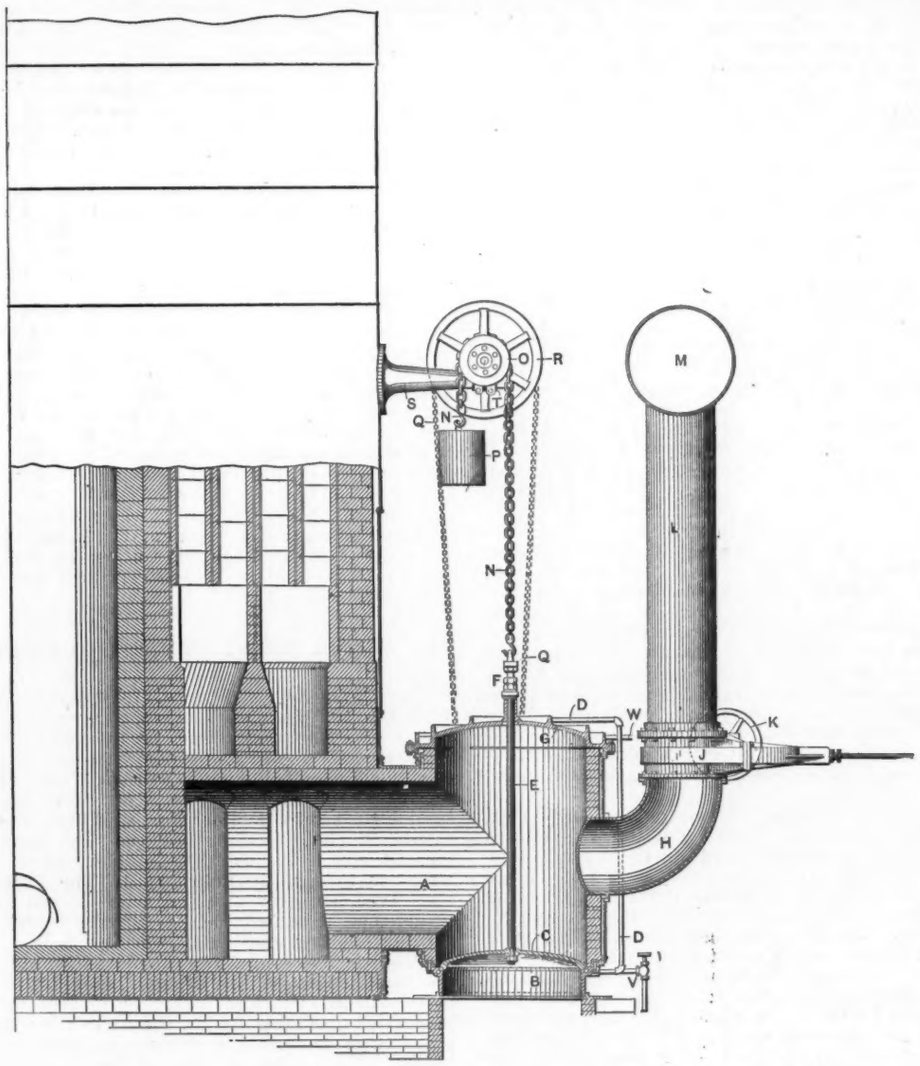


Fig. 2.—Section of the Kennedy Chimney Valve.

VALVES FOR HOT BLAST STOVES, DESIGNED BY JULIAN KENNEDY, PITTSBURGH, PA.

Our Exports of Manufactures.

The remarkable upward movement of exports of American manufactured goods in 1899 is strikingly shown in the official returns issued by the Treasury Bureau of Statistics. The total value of manufacturing exports last year was $380,787,890, as compared with $307,924,994 in 1898, and $279,652,720 in 1897. The proportion of manufactured goods to the whole mass of exports of United States products in 1899 was 30.39 per cent. In 1898 the proportion was 24.96 per cent. The gain of $73,000,000 in manufacturing exports last year more than counterbalanced a decline of about $70,000,000 in the value of agricultural products exported in the same period. The demand for American iron and steel products was the chief element in the gains of last year, aside from an increase of $12,000,000 in refined mineral oils. The total exports of manufactures of iron and steel, as reported by the Bureau of Statistics, increased from $82,771,550 in 1898 to $105,689,645 in 1899, or by nearly $23,000,000. The following table shows the value of exports of some of the goods in metal lines last year, as compared with 1898:

Articles.	1898.	1899.
Agricultural implements	$9,073,384	$13,594,524
Carriages, cars, &c	3,867,515	5,036,169
Cycles and parts	7,092,197	4,820,284
Copper ingots	33,598,869	41,250,166
Steel rails	5,838,464	6,122,382
Steel plates	787,245	1,690,510
Structural iron and steel	1,255,451	2,059,289
Steel wire	3,036,818	5,526,930
Builders' hardware	6,945,221	8,943,530
Electrical machinery	2,523,644	3,143,336
Metal working machinery	5,741,750	6,840,924
Pumps and pumping machinery	2,300,811	3,016,645
Sewing machines and parts	3,062,471	4,103,328
Locomotive engines	5,190,782	4,767,850
Typewriting machines	2,077,250	2,776,363
Miscellaneous machinery	16,413,893	19,721,191
Iron pipes and fittings	4,595,451	6,763,396

Are American Manufacturers Too Liberal?

BY WILLARD S. MATTOX.

Yankee genius and ingenuity are supplying ideas to all the world and no legislation is availing to stop the drain. Neither do international patents cover the case sufficiently to guarantee immunity from this mental infraction of the Decalogue. The World's Fair at Paris will be a collection of the advanced ideas of the world in materialized form. In certain departments the United States will lead them all, and it may be well to consider some features of our export trade in this connection.

About a year and a half ago the writer met in Manchester, England, Benno Rieter of the well-known firm of Johann Jacob Rieter & Co. of Winterthur, Switzerland, machinery and machine tool makers. Mr. Rieter had just arrived in England from a tour of America for his firm. He had borne letters of introduction to all the largest manufacturing concerns in Pittsburgh, Cincinnati, Chicago, St. Louis and elsewhere, West and East. He was making out his report, to be forwarded to his firm. This report was most elaborate, was minute in detail and contained many drawings. It covered several score of sheets of legal cap. Mr. Rieter was a draftsman, a trained mechanic, an expert engineer. He made no attempt to disavow the exact purpose of his trip to America. It was to get the best thoughts of the day in the particular line of goods his firm were manufacturing from the most inventive nation in the world. He may not have declared himself quite so frankly to his American friends. In conversation he admitted he had been received cordially everywhere in America and had been shown over many plants, sometimes taking a day or two to examine one shop. Details of new machinery were fully explained to him. He had made exact drawings of many machines that were absolutely new to him, working drawings, done to scale, from which models could easily be made. All this was with the consent, apparently, of the owners of the tools. Mr. Rieter remarked, with Continental cynicism, on the good natured simplicity and lack of suspicion of American business men and the freedom from secrecy with which their business was conducted.

This gentleman's experience in England was quite the reverse. His indorsements were equally strong, but he did not see the inside of a single shop. He was received in offices with a courteous negative to all requests to view their plants and got no further in his search for knowledge. He was especially anxious to visit Mather & Platt, Manchester, makers of electrical machinery, but failed utterly. But he went back to Switzerland stored with information and loaded with valuable ideas which the brains and capital of this country have produced. From the foreigner's standpoint such a course is admissible and praiseworthy, but herein lies our own weakness. This is where protection of the secondary kind becomes imperative.

It is notorious how deftly German patents on foreign made goods may be evaded by skillful imitators. I have been told by American agents handling these goods that American bicycles and sewing machines have not so large a sale in Germany as formerly, because practically the same things are being turned out now and at a cheaper cost by German makers. The European agent for a large firm of machine screw makers in this country told me that his experience on the Continent confirmed this. He had no trouble with European customers in selling one of his machines, ostensibly for trial. In many cases his customers even asked for an American mechanic to operate the machine, and this was always granted. In process of time the native workmen mastered the intricacies of the tool and the American artisan was shipped away. On the second visit of the salesman it was found that the trial was satisfactory, but no orders for other machines were forthcoming. The reason was obvious. The principle of the patent had become the property of the customer and the means to operate it had been imparted to native workmen. With slight alterations of detail, at less expense, German machinery of the same pattern was being turned out to replace the orders which were naturally expected to follow. United States Consul Halstead at Birmingham, England, has called attention to much the same state of affairs, and corroborative reports have been had from American salesmen in many branches of trade doing business in Europe.

In England the conditions are not so aggravated, though from different causes the check to American imports—that is, highly finished products—has been noted. In England the customer does not "borrow" the idea embodied in the American tool and make his own modified machine, simply because his workmen, or the unions they represent, will not allow him to have the machine in the first place. A case has been reported of a set of American bicycle machinery sold to a firm in Coventry, England. The customer for some time declined to buy, urging that he would never be allowed to run it, but was finally persuaded to install the machines. The American agent stayed for a few days and instructed the British workmen in the use of his tool and went away. He returned in a few weeks and found the machine covered with a tarpaulin. It saved too much time and too much labor and the British workman had refused to accept it. Legitimate competition is the life of industry. If American workmen and engineers and designers had only fair competition to face in the form of machinery of a different type to their own, but equally efficient or cheaper, there would be no despair for our future. But when one has to fight with the offspring of one's own genius, pruned and pared and dressed in the flag of another country, then comes the time for a newer form of protection that will protect.

The principle involved seems to be a national one and is expressed in every form of our national life, social, political and commercial. It may be self assurance or carelessness, but it operates efficiently against us, whatever the impelling motive or the thought behind it. Few if any blast furnaces in this country are within high walls or barred gates. Free access may be had to the furnaces and grounds, cast house and laboratory. Strangers may inspect such plants, examine the store of coke, ore and stone, watch the method of charging, make note of each burden and get an analysis of the product. Too little thought is given to the protection of legitimate trade secrets. It might be the part of wisdom to borrow a little from our English cousins' methods. Undoubtedly the idea of hedging around every process of manufacture from iquisitive eyes is carried to an almost amusing extreme in that country of inherited businesses and inherited prejudices. "Better the excess than the defect" of caution. Thoughts in concrete form or spoken are too freely open to inspection in the United States. The products of a century of advancement beyond the limited and conservative confines of a European civilization are given away too lightly. It may be that the free spirit which prompts the system of an interchange of notions has been a factor in our development. It may also be that the time is coming when this exchange will have to be stopped. The Englishman guards his thought, his speech and his property. We of a greater faith, with more to lose, hold our possessions easily and exhibit them with too much pride. Elementary protection did well for us, made it possible to arrive at our present high estate. Who will frame a code to protect our "protected articles?"

Quick Bridge Building in England.

The Patent Shaft & Axle Tree Company, Limited, of Wednesbury, England, have just executed a remarkably smart piece of work for the Government of Natal. On December 21 an order was received for the construction of bridges to span the Tugela River at Colenso and the Blaauwkrans River at Frere, which had been destroyed by the Boer forces. There was a stringent clause in the contract that the first span should be handed over to the shippers complete in six weeks' time—that is to say, by February 1. The Patent Shaft & Axle Tree Company, Limited, who secured the contracts, established a record for the British bridge builder by turning out the work in 16 working days. The Colenso Bridge is of five spans, and the one at Frere of two spans, the total length of the bridges being 520 feet and 210 feet respectively. The bridge is 16 feet in width, and thus after providing for the single railway line of 3 feet 6 inches gauge, space is left at each side for a footpath 4½ feet wide. From the foot of the girders to the top of the arched bracing is 16 feet. The work was undertaken with the utmost zeal by the officials and employees of the company, with a view to its completion at the earliest possible moment. The first thing to be produced was the steel, which was manufactured by the company from the crude pig iron. The steel had then to be rolled into the requisite sections, and then made up to correspond with the templates. A single span contains 53 tons of plates, 13 tons of bars, 26 tons of angles and 13 tons of tees. In the two bridges 483,000 rivet holes had to be drilled, and the same number of rivets secured by hydraulic pressure.

A cash bonus of $20,000 has been raised at Waynesburg, Pa., with the object of securing the establishment of a Tin Plate works at that place, and a free site of 5 acres is also offered. It is said that negotiations are under way looking to the erection of the proposed plant, to cost $100,000, and to be completed by July 1.

The lumber and shingle manufacturers of British Columbia have combined to fight the Puget Sound lumber combination. They will endeavor to induce the Canadian Government to impose a duty on all lumber and shingles.

The Iron Age

New York, Thursday, February 1, 1900.

DAVID WILLIAMS COMPANY, - - - - - - - PUBLISHERS.
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JOHN S. KING, - - - - - - - - - BUSINESS MANAGER.

An Unsafe Foundation for Trade.

The conditions of the trade in many industrial products in this country have not been such as to fit salesmen for success in foreign fields. Foreign products being so largely excluded from our markets, competition here proceeds without regard to them. There has been nothing in the experience of thousands of intelligent and energetic selling agents to afford an insight into the requirements of any other than the home market, or of the best methods for reaching buyers abroad. One result of this confined business field has been that each salesman's success depends, in a measure, upon capturing trade from his competitors, especially in goods of which there has been overproduction. Each selling agent has employed practically the same methods as every one else in his line, and selling has become largely a matter of price. Buyers contribute to this tendency by showing a willingness, no matter how well they may have been served by any firm, to listen to the first suggestion from a rival concern of lower prices. It is, of course, not good business to pay more for an article than is charged for it elsewhere, but if the question of price be always kept uppermost the more important matter of quality may be overlooked. With market conditions so open to every interested person as in the United States, sales of goods at a decline speedily become known to the whole trade, with the result that every firm in the same line feels called upon to reduce its prices. It is not necessary to quote examples to support the assertion that in very many lines at least some concerns have not been able to meet the extreme cuts in prices without debasing the quality of their goods. It is true that in prosperous times prices incline upward, but this is due to increased demand and not to any efforts of salesmen, so that it remains true that selling efforts based upon price rather than quality as an inducement to buyers lead to deterioration.

Another consideration in regard to our home market is that the demand for many products is not due primarily to any efforts whatever made to push their sale. In the days of our greatest railway development capitalists did not project new lines of road at the instigation of the producers of rails and rolling stock. The tall office buildings in our cities have not gone up as a result of the efforts of sellers of steel construction material. On the contrary, there has been an enormous consumption of materials and machinery where the demand has first been indicated, after which salesmen have flocked around, each intent upon obtaining orders —at a discount from competitors' prices, if by no other means. Of course the same condition applies to foreign demands, in so far as they come into existence without the agency of manufacturers or salesmen. But the Americans who undertake to share in filling these demands may be confronted, in addition to American competition, with that of foreign firms, better versed in the conditions of business in each particular field than our own people. All this indicates the value of special preparation for foreign trade, no less than with the home field, and in respect to other details no less than to prices.

The unprecedentedly large exports of American manufactures during the past 12 months have not been due wholly to new conditions. It is the accumulated result of efforts in this direction for many years—the fruition of growth in many lines of production which has escaped the notice of foreign observers until, finally, the achievements of to-day cause widespread surprise. No doubt an equally important result might have been attained much sooner had the many attempts to secure foreign trade been made with a better insight into markets abroad and with more persistence. An analysis of the trade which has been done would show very many failures, reaching back for years. There are lines in which the export trade is less now than in some former years, owing to mistakes made by pioneers in exports in these lines. And not least among these mistakes has been the idea of underselling the whole world in respect to price. Leaving aside steel and certain other materials, the quality of which may be appraised closely, and also machinery and certain patented specialties which have been sold abroad without competition, we have been exporting goods because they were offered for less money than foreign producers charged. Had the quality been satisfactory trade in such lines ought not only to have continued, but to have grown in extent, instead of showing a decline in some cases. Thus the value of exports of American bicycles to Europe during 1899 was 45 per cent. less than during 1898, while our total exports of bicycles declined 32 per cent. One of our consuls in Germany suggests that the cause was the shipment of too many poor machines. The history of the case in brief is that manufacturers here, having a surplus of low grade wheels, unsalable at home, managed to find a market for them abroad by reason of the price alone, without regard to whether there might be a continuation of the trade. The buyers accepted them freely, being unfamiliar with American bicycles, but were dissatisfied with the result of testing the wheels, until not only will they not buy any more of the same kind, but the facts will operate to prejudice all of Continental Europe against bicycles of American make, the good as well as the bad.

The fact is that the only export trade that is worth working for is such as, under favorable circumstances, gives a promise of becoming capable of development. It costs too much in money and effort to make a foreign market for manufactured goods to risk the loss of future trade for the sake of making a present advantageous sale. While the sale of goods under circumstances which render it certain that there will be no repeat orders may afford a present profit, the effect upon the trade of the country as a whole, having reference to future business, is certain to be damaging, and it justifies the implication of a lack of commercial morality on the part of Americans which one sometimes meets abroad. It is not a question of whether the exporters of any other country are more or less honest; the capabilities of American industry are so great and the standards of American production in many lines are really so high that such sharp practice as was referred to by the Chinese Minister to this country at a recent dinner in New York cannot be too severely frowned upon.

But leaving this feature aside, whoever attempts to do an export trade on the basis of selling goods in a given market for less money than anybody else will be certain to find later some competitor, either at home or abroad, selling like goods even lower; whereas the firm which bases its trade upon the high quality of its goods is much less apt to find another offering goods of bet-

ter quality. A fixed quality of goods, strongly insisted upon, at a price which will afford a fair profit, may at times seem to find a slower sale than lower priced wares which appear "just as good," but a reputation once made for them will be lasting, whereas goods sold on the basis of price alone will be forgotten as soon as something is offered for less money, and before there has been time for a reputation to be established. Else they may be remembered only because of their lack of excellence, and serve to injure the demand for our products as a whole.

The Labor Situation.

In these prosperous times, with wages so generally advanced, and workmen earning far more than they were previously able to get for many years, labor troubles should be few and far apart. Golden days are now being enjoyed by employers and employees. Factories and mines are running to their full capacity instead of half time or intermittently, and earnings are piling up monthly as they have not previously done for a long period. Taking some branches of manufacturing, the wages now paid may almost be considered phenomenally high. In the rolling mills, for instance, recent adjustments in conformity with the wages scale have brought the rates paid to a higher point than for 20 years. We have had times in the past when such high rates were artificially maintained by strong labor organizations, but trade was dull and earnings were light because the mills could not be kept in constant operation. But now every wheel is turning and is likely to be kept moving for at least months to come. High rates of wages therefore mean large monthly earnings. It is a time when not only mill and mine owners are anxious to get every dollar of earning power from their operations, but when every workman would seem to be equally anxious to get the best possible results from his own efforts. These are the days when provision should be made by large savings for the slack times which are sure to come sooner or later. Activity in trade cannot be kept up continuously.

It is extremely desirable for many reasons that under existing conditions labor troubles should be avoided. The tension is great along the entire line, from the miner of the raw material to the ultimate consumer of the most highly finished product. Every link in the chain must stand the strain or trouble and confusion are caused to a long line of interdependent manufacturing and commercial interests. Employers of labor feel the importance of the situation and the responsibility resting upon them of keeping customers supplied probably just as much as they appreciate the desirability of securing a steadily full output on account of the profits involved. They endeavor by all reasonable means to keep their workmen satisfied, and to remove possible causes of friction which might compel the stoppage of operations. Thus we quite frequently see reports of voluntary advances in wages, undoubtedly made for the purpose of promoting contentment and preserving peace and harmony.

But despite the efforts made to keep everything moving smoothly, we have at present a condition of perversity and uneasiness in some inportant lines which may lead to serious consequences if prudent counsel does not speedily prevail. It is, of course, assumed by those who are fomenting troubles of this character that the proper time to act is when business is brisk and a strong pressure is felt for all kinds of material. Employers may then concede a point or two rather than have operations suspended by a strike. But indications are visible of a pugnacious spirit among employers, especially among those managing important interests, and it is to be feared that the demands of labor when pushed too far will meet with such resistance as to considerably derange important branches of industry affecting wide areas. While labor leaders are active, the employers of labor are also on the alert.

A peculiar feature of the labor situation, which is certainly not promoting a more kindly feeling among employers, is the growing tendency among employees to slight their work. The fact has been alluded to before in these columns. It is strongly brought out in the following letter, which we have received from a large employer of labor in an important manufacturing city:

We know that we are getting the top of the market as to prices and that the work is put through the shop, to say the least, at less than the average cost, and that the non-productive expenses are as low as a plant of this size is run with anywhere, and still the net results are not what they should be as compared with the business of 1898. We have practically no piece work, everything is done by the day's work, but we are not getting the work out of machines that we did about two years ago. This is true, too, of the foundry, in which it is nearly all day work. This and the high cost of raw material make the results far from satisfactory. One cause for the machines not turning out work as fast as they did a year or two ago is that quite a percentage of the men are unsteady and are changing from shop to shop. Before the rush our men were contented with one pay day a month and had been for 25 years. They made a request for two pay days early last spring and it was conceded. It simply means, to a great many of them, two sprees instead of one. They return after a pay day not fit for work, and we suffer in consequence. We are satisfied that we are no worse off in this respect than any of the other shops in this city, or, for that matter, any other place.

High wages and honest work should be compatible. High wages and full time should further be productive of contentment. It must regretfully be admitted that these are not axioms.

PERSONAL.

James W. Brown of Howe, Brown & Co., Limited, steel manufacturers, of Pittsburgh, has gone on a Mediterranean trip.

George Lauder of the Carnegie Steel Company, Limited, and a member of the Board of Managers, sailed last week on a Mediterranean cruise.

George M. Laughlin of Jones & Laughlins, Limited, Pittsburgh, has been made president of the Keystone Bank in that city, to fill the vacancy caused by the death of J. J. Vandergrift.

Peter McCool, superintendent of the Allegheny Works of the Pressed Steel Car Company, at Allegheny, Pa., has sailed for Europe.

Dr. F. A. C. Perrine of the Leland Stanford Junior University has become a member of the technical staff of the John A. Roebling's Sons Company of Trenton, N. J.

Archibald Johnston, superintendent of the armor plate department of the Bethlehem Steel Company, has been appointed assistant general superintendent, to succeed Robert H. Sayre, Jr., resigned. Mr. Johnston has been in the service of the company since 1889, and has visited foreign manufactories several times in their interest. He is an armor and ordnance expert.

William Kough, who was from 1860 to 1894 engaged at Owen Sound, Canada, building the first dry dock, and engaged in shipbuilding for many years, has opened a consulting office at Toronto, Canada, taking up the subject of pneumatics for heating, ventilating and power.

F. Lynwood Garrison, mining engineer, of Philadelphia, has gone to China as an expert to examine and report upon the iron ore and coal resources of the Yangtse-kiang Valley.

Edwin S. Mills, manager of the Carnegie Steel Company's and Oliver Iron Mining Company's interests at Cleveland, Ohio, has been elected a member of the Board of Managers of the Lake Carriers' Association.

Edward N. Moore of Youngstown, Ohio, has been appointed superintendent of the American Iron & Steel

Company's mills at Lebanon, Pa. Mr. Moore was formerly superintendent of the Andrews Brothers Company's mills at Haselton, Ohio.

C. Hedemann, manager of the Honolulu Iron Works, Honolulu, Hawaii, is at present on a visit to this country. Mr. Hedemann is buying tools and equipment for an addition to be built to the plant at Honolulu.

J. Sheldon Norton, formerly assistant superintendent of the Thomas Iron Company, Catasauqua, Pa., has been appointed general superintendent of the Empire Steel & Iron Company.

Charles P. Wheeler of the pig iron firm of Pickands, Brown & Co., Chicago, sailed for Europe last week to be absent for about two months. He will go direct to Italy, and from there make a tour of a large part of Europe.

Capt. John A. Wood of Pittsburgh will resign his position as director and superintendent of the Pittsburgh & Monongahela Coal & Coke Company about the middle of February, and will start on a trip around the world.

George T. Oliver of the Oliver & Snyder Steel Company of Pittsburgh has returned from Europe. Mr. Oliver will likely be a candidate for Congressman-at-Large.

Alexander R. Peacock, first vice-president and general sales agent of the Carnegie Steel Company, Limited, at Pittsburgh, is going to California for an extended stay.

Professor Edgar Marbury has been elected president, and L. Y. Schermerhorn, vice-president of the Engineers' Club of Philadelphia.

OBITUARY.

PETER AMERMAN.

Peter Amerman, head of the boiler manufacturing firm of P. Amerman & Sons of Hartford, Conn., died in that city on January 25, at the age of 79 years. He had been in the business for more than half a century.

ROWLAND H. EAST.

The death is announced in Peru, South America, of Rowland H. East, who was born in England and educated as an engineer under Robert Stephenson. He joined the British navy, and was incorporated in the staff of the Naval Construction Department at Devonport. He subsequently entered the service of John Roach & Son of New York, with whom he remained as chief draftsman for several years. He was selected to organize the Mollendo & Arequipa Railway in Peru as general traffic manager, in which capacity he remained three years. In 1873 he was called upon by the President of the Republic to reconstruct and reorganize the Lima, Ancon & Chancay Railway. Returning to Europe, he obtained the post of engineer and general manager of the Bilbao Iron Ore Company. He went back to Peru in 1884, and undertook the inspection of copper mines near Pisco. At the time of his death he was British Vice-Consul and American Vice-Consul at Paita.

THOMAS MAXON.

Thomas Maxon, a well-known mechancial engineer and inventor, formerly of Dayton, Ohio, died suddenly on January 21 at Huntington, W. Va., aged 63 years. He was patentee of a lever jack, an endless chain, a folding car step and several other mechanical devices.

GEORGE T. BARNES.

George T. Barnes, a well-known iron merchant, died of heart disease at his home in Philadelphia, January 30. Mr. Barnes was born in Philadelphia in 1846, and graduated from the Central High School. He began to import iron ore about 30 years ago, and his business became one of the most extensive in this country. Of late he chiefly imported Spanish and African ore. Mr. Barnes was also connected with the firm of William R. Hart & Co., and for many years was treasurer of the Crane Iron Company. He was also a member of the Executive Committee and Board of Directors of the American Pig Iron Warrant Storage Company. Among the other positions he held was that of president of the Catasauqua & Fogelsville Railway, which office he filled for many years. Mr. Barnes recently established a line of steamships, known as the Barnes Line, for the shipment of iron and manganese ores from Mediterranean ports to Philadelphia and Baltimore.

The Ferracute Machine Company, of Bridgeton, N. J., have shipped a carload of fourteen presses with motor driving machinery, &c., to the Paris Exposition. About one-half of the machinery will be placed in the Main Exposition Building and one-half in the Machinery Annex at Vincennes. Later on a final carload will be sent, a part of the shipment being special machinery for coining.

Copper Rolling Mills to Unite.

The Boston *Herald* is authority for the following from New Bedford: Plans are being made by three of the largest copper manufacturing companies of Massachusetts for a consolidation under one management, making one of the strongest concerns in its line of business in this part of the country. The three companies interested are the New Bedford Copper Company, the Taunton Copper Works and the Revere Copper Company. Although the final steps for making the combination have not yet been taken, all the essentials have been agreed upon, and the new order of affairs will go into effect with the first of next month.

The three companies have long been competitors in the markets, and, being rather small concerns, have suffered somewhat from the competition of larger concerns. For some time the directors of the three have believed that if they could come under one management they would constitute a powerful influence in the trade, and that the change would be mutually beneficial. Now all three boards have reached conclusions in common, and the only steps necessary will be the formal votes of the stockholders.

The consolidation is sufficiently assured to permit of the announcement that after February 1 the management will be virtually in the interest of the new corporation. The main points now at issue are the ratio at which each concern will be turned into the new concern. The New Bedford company are now capitalized at $250,000, the Taunton at $252,000, and the Revere at $300,000, a total of $802,000. The new company, however, will have a capital of only $600,000.

It is learned from reliable sources that the proposed management will include Henry M. Lovering of Taunton, president; Clarence A. Cook of New Bedford, vice-president and agent; Henry F. Bassett of Taunton, treasurer; John H. Barrows of New Bedford, assistant treasurer, and the directorate will include four directors chosen from the present New Bedford company, four from Taunton and one from Revere. The main offices will probably be in Taunton, though each plant will be managed as at present, and none of them will be reduced in capacity or discontinued.

The companies are extensively engaged in making copper sheathing, yellow metal sheathing, print rolls and, in Taunton, wire. The same business will be continued.

Mr. Frick's Enterprise.— A good many reports have been current concerning enterprises with which Henry C. Frick is to associate himself. We are informed by excellent authority that Mr. Frick is now negotiating for the purchase of the plant of the Maryland Steel Company at Sparrow's Point, Md., the plan being to make at that point ship plates for the New York Ship Building Company at Camden, N. J., and to continue the production of steel rails, chiefly for export. The Mellon family, bankers, of Pittsburgh, are reported to be interested in the negotiations, which have not yet, however, been carried to a conclusion.

Gould & Eberhardt of Newark, N. J., have secured a space for the Paris Exposition in which they will exhibit a 33 x 9 inch entirely automatic gear cutting machine, demonstrating the use of radial duplex gang cutters, which system finishes two or more teeth at one travel of the cutter slide. They will exhibit also a No. 1 water cutter grinding machine, and a 16-inch shaper showing extension base and "double triple quick stroke" systems. Each of these machines will be driven by an independent electric motor.

The Willamette Iron Works, Oregon, have been revived and renamed the Willamette Iron & Steel Works. It is understood that ex-Senator H. W. Corbett is back of the new concern.

The Ferro-Titanium Company of Buffalo, N. Y., have been incorporated with a capital of $100,000, to manufacture alloys of titanium and other metals. Charles S. Maurice of Athens, Pa., and Edward Hayes of Buffalo are named as directors.

Tests were begun this week at the Brooklyn Navy Yard of the new oil burners designed to supersede coal in torpedo boats.

New Plans for Mechanical Ore Unloaders.

CLEVELAND, January 30, 1900.—The Carnegie Steel Company, operating ore unloading docks at Conneaut, Ohio, completed arrangements this week for the embodiment of several very radical new features in the two new mechanical ore unloaders for which they a few days ago closed contracts with the Webster, Camp & Lane Machine Company of Akron, Ohio. Considerable was published during the latter part of last year regarding the new machine, which was installed on the Conneaut docks by the above mentioned firm late in the autumn. The machine is the invention of G. H. Hulett, who is known as the inventor of several of the types of car dumping machines in use at ports on the great lakes, and its object is, of course, to do away with the necessity for the employment of large gangs of men in the holds of vessels. These workmen have heretofore been required to load the huge buckets, transferred by hoisting and conveying machinery, and their repeated enforcement last season of arbitrary demands for increases of wages caused, it will be remembered, much inconvenience to the dock interests. Experiments were made with the automatic unloader until a few weeks ago, and, although several defects were discovered, these were remedied one by one until the apparatus has been brought practically to the good working order. Indeed the last boat unloaded, the "Griffin," was handled without a hitch, the clam shell bucket, which is the distinctive feature of the machine, taking up 10 tons of ore at every scoop with hardly the slightest variance. As soon as it was demonstrated a week or two ago that the machine was unquestionably practicable the Carnegie interests placed orders for two additional machines. It was thought, until this week, that it would be impossible to have either of these machines ready for use next season, but Mr. Hulett and the manufacturers, who are naturally very much interested in the project, have bestirred themselves, and as a result it seems practically certain that both new machines will be in working order before the season is well advanced. It is hoped to have one machine ready to go to work on the boats by June 1.

The most interesting phase of the whole situation, however, came this week, when Mr. Hulett submitted to the Carnegie officials proposed changes in the plans for the new machines, which contained so many points of improvement over the one already installed, that they were at once adopted. The machine now on the Conneaut docks is fitted with a huge walking beam, which is run out over the vessel to be unloaded, thus permitting the descent through the hatch of the mast, which is suspended from its outer end, and at the lower extremity of which is the clam shell bucket. Mr. Hulett's new plan is to construct on each of the new machines two walking beams instead of one. The two arms will be operated on parallel lines, but the second beam will be of somewhat lighter construction than the first, and possibly its clam shell bucket will be of less capacity. It is hoped that the introduction of this second walking beam and bucket will in a considerable measure obviate the difficulty sometimes experienced in having the heavy bucket catch the leavings of ore in the bilges. Under the plan of operation of the new machines the heavy part of the machine will first work upon a hatch and take out the greater proportion of the ore. It will then be moved along the dock to a point opposite the next hatch, while the change in position will bring the lighter part of the machine directly over the hatch which the heavy beam has just left, and the lighter bucket will be set to work cleaning up the ore remaining. The "cleaning up" bucket will thus follow the main unloader from hatch to hatch throughout the entire length of the boat. The new machine will require four men for its operation instead of two, as required for the present type of machine, but it is believed that by the system so nearly all the ore in a vessel may be taken out by machinery that not more than one or two men will be needed to clean up the residue.

The New Cumberland Sheet Mill.—The Cumberland Steel and Tin Plate Company of Cumberland, Md., have leased their new sheet mill, comprising four 26-inch mills, to N. & G. Taylor Company of Philadelphia, who expect to start operating same February 1, with Daniel Morgan of Baltimore as manager. The Cumberland Steel & Tin Plate Company will still, however, continue to operate the balance of their plant, comprising open hearth and crucible furnaces, plow and harrow disk shops, forgings and projectiles for the United States Government.

It is estimated that the cost of the construction of the proposed canal between Berlin and Stettin, in Germany, will be $10,400,000.

Lake Iron Ore Matters.

DULUTH, January 29, 1900.—The present daily working capacity of blast furnaces on the shores of Lake Superior and the upper peninsula of Michigan is about 550 tons, nearly all of which is in charcoal furnaces. Steps are under way that will add materially to this output, aside from the project of the Lake Superior Steel Company at Duluth, whose plans are temporarily in abeyance. Among the projects bearing on the subject are the Zwillinger process for wood carbonization, which will receive a final and authoritative test at Ashland the coming week. Preliminary tests have resulted so satisfactorily that no doubt is expressed as to the outcome. There are continuations of negotiations in the affairs of the Lake Superior Steel Company, and some important developments are expected in a short time. The company have obtained certain additional options on properties they need.

Some extensive options on mineral bearing lands on the Marquette range have just been secured by both the Minnesota and Oliver companies, and these will be explored as soon as practicable. There is a chance for finding ore west of Ishpeming, and negotiations are in progress that may reopen some very old properties there and explore favorable lands. This is on what has been known as the "north range," and some ores of very fine quality have in years gone by been taken from there. At the old American Mine, where the narrow vein was followed several hundred feet in depth and for a width of not much more than 6 feet, there are still pumps buried under a great depth of water, and which are likely to be gotten at shortly. Still further to the west a find of Bessemer ore has recently been made, running high in iron, low in phosphorus and moisture, and of possibly considerable extent. It will be developed soon by one of the large concerns of the country. Some miles further west there are ore indications, with a good formation; and there are reports of the discovery of bodies of merchantable ores there. From these various finds it is evident that much may yet be discovered on the west Marquette range, with proper care and thorough exploration.

This matter of thorough exploration is an important one, and its bearing on the future of supplies is being shown in a strong light frequently. It is notable on all ranges that ore is being found to-day where it was explored for vainly years ago. On the new Mesaba, where the early exploration was supposed to have been fairly competent, ores are now being opened into on tracts that were worked over by the expenditure of many thousands of dollars six and eight years ago without any result. The knowledge of the formation is growing more intimate yearly, and conditions below the surface that would have stopped work absolutely five years ago have no effect to-day. In many cases these conditions being passed, ore is being found below, in a surrounding that would have then been considered the hight of folly to work into.

Several more large options have been closed the past week by the Oliver and other companies, some of them on lands in 58-19, and the only thing that is delaying exploration now is the scarcity of drills and expert drill men.

Not the least of the famines in these days of extraordinary consumption is so far as the iron ore regions are concerned, is that of drill machinery for explorations and expert diamond drill men. This famine makes itself seriously felt in all ore districts where work is actively under way for new properties and is harassing every one exceedingly. It may be said that it is impossible to secure drills for new work inside of 60 or 90 days, and the companies that are regularly employing dozens of drills daily are finding themselves unable to hold either men or machines longer than for the immediate work in hand. There is a scarcity of machines, the drill manufacturers not being able to turn them out as fast as required, and there are not enough expert men at hand to handle the work that presses. This last is owing largely to the increase of like work all over the world, and of the drain that Lake Superior has met, in sending its experts to all quarters of the globe.

Two drilling contractors working in Minnesota have now been operating day and night 30 drills, all but eight of them on the Mesaba range. One of these contractors states that he will be unable to take new work for 60 days, the other is willing to make no date for additional jobs. Other smaller contractors are also filled with contracts long ahead. Not long ago the Minnesota Iron Company, foreseeing the coming requirements, took an option on the entire output of a large diamond drill manufacturing concern at Chicago for 60 days, and this concern are just now reaching the close of that period. Last week one mining company attempted to make a contract for six complete drill outfits for several months to come, but were, of course, unable to secure any part of

them. While a few months ago it looked as if the demand would slack at the approach of severe weather, it is now evident that it will continue well through the present year, at least. Drill men here are doing work on all other ranges, while the Marquette is well supplied, ordinarily, from its own territory. Drills will be taken from here as soon as they can be had to the north shore of Lake Superior in Canada, and to the east of the lake, in the Sudbury country.

On the Vermillion range, near the hard ore mines of the Minnesota Iron Company, there are explorations that appear to be meeting with success enough to warrant the introduction of steam hoists, &c., and it looks as if both the Oliver and the Mahoning companies had new mines there. It is the general belief of mining men that the Vermillion formation may be found to extend to the west and southwest of Tower, and that in towns 61-15 and 16 are favorable fields for exploration. East of Tower the Minnesota Company and the Chandler are pushing exploration, and the latter have recently taken a number of tracts they are to explore at once.

On the Gogebic range the Tilden Mine has been found to contain a much larger ore body than had been supposed, and its life has been very materially extended. Rumors as to the disposition of the Atlantic Mine are again rife, and several large companies are spoken of as the buyers. Your correspondent can say definitely that this mine has been sold, but he is not permitted to give now either price or name of buyer, who is a large consumer.

D. E. W.

Illinois Anti-Trust Law Void.

The Illinois anti-trust law of 1893 was declared unconstitutional by Judge Kohlsaat in the United States Circuit Court at Chicago on the 29th ult. Because of the section which exempts from its provisions the agriculturist and stock raiser, the court held that the statute is tainted with class and special legislation, and is in contravention of both the federal and State constitutions.

In the decision Judge Kohlsaat refused to confine his finding to the clause in question, but put the ban on the entire act.

The anti-trust statute which is thus declared void by the federal court is the law which was enacted in 1893. The Supreme Court of the State has never passed upon its constitutionality. Decisions upholding the validity of the act of 1891, of which the law of 1893 is an amplification, have been rendered by the State's chief tribunal in the "milk shippers'" and "glucose" cases, but that statute did not contain the clause which Judge Kohlsaat to-day finds is class legislation. The objectionable part of the law is section 9, which contains the words: "The provisions of this act shall not apply to agricultural products or live stock while in the hands of the producer or raiser."

The ruling was made in the case of the Union Sewer Pipe Company against Thomas Connelly, but applied as well to the case of the same plaintiff against William Dee, the two causes having been consolidated. In declaring the law invalid, the court took from the jury the case, which was on trial the greater part of last week, and instructed that judgments be entered in favor of the plaintiff.

The action by which the constitutionality of the law was attacked was brought by the Union Sewer Pipe Company to recover about $6000 from Connelly and from Dee on contracts made several years ago. The defendants resisted payment of their notes on the ground that under the Illinois law a trust has no right to sue or recover on any contract made in this State. Other defenses were that the Union Sewer Pipe Company of Ohio was a trust or combination organized for the express purpose of restricting trade contrary to the common law in Ohio and of Illinois and to the federal statute known as the "Sherman act." Judge Kohlsaat held that neither of these defenses was applicable to the case.

Opinions differ as to whether the State is now left without an anti-trust law. It is held by some lawyers that the act of 1893 did not supersede that of 1891, and that the latter statute is still in force. Herbert Hamlin of counsel for the plaintiff says that the matter is still in doubt, inasmuch as Judge Kohlsaat did not touch upon this question in his decision.

"Even if the act of 1891 is not affected by the decision," Mr. Hamlin said, "it is still of vast importance, because the nullifying clause is one which affects three-fourths of the people in the State. In the advance sheets of the last Illinois Reports the laws are mentioned as separate statutes."

Henry Coghlan, representing one of the defendants, declares that both laws are wiped out of existence.

The Director of the Census has ordered a count of the traveling salesmen in the United States.

MANUFACTURING.

Iron and Steel.

Skilled employees of the Youngstown Works of the National Steel Company at Youngstown, Ohio, have been given a voluntary advance of 10 per cent. in wages.

The Pennsylvania Steel Company, Steelton, Pa., have notified their employees of a voluntary advance in wages of 10 per cent., taking effect March 1.

Last week the Carnegie Steel Company purchased about 4 acres of land in Homestead, which will be used for additions to their Homestead works.

At a meeting of the stockholders of the Glasgow Iron Company, held at Pottstown, Pa., January 26, Comly B. Shoemaker, the president, made the announcement that every mortgage against the company had been paid off, and that there was not a note against the concern. The following directors were elected: Benjamin H. Shoemaker and Robert Shoemaker, Jr., of Philadelphia; Comly B. Shoemaker and Edgar S. Cook, Pottstown, and Samuel A. Bacon, Haddonfield, N. J. Oliver E. Shuler was elected treasurer.

The work of grading and otherwise preparing the land for the new mills of the Illinois Steel Company, at Milwaukee, Wis., is now under way, a hill containing many thousand cubic feet of earth having been entirely removed during the last two weeks. The actual work of construction will not be commenced until it is decided approximately when the machinery can be delivered. The builders of machinery of the character required are now crowded with work. Assurances have been given to the city authorities that the construction of the plant will be pushed as rapidly as possible.

The Franklin Steel Casting Company, Franklin, Pa., manufacturers of high grade open hearth steel castings up to 60,000 pounds, will proceed immediately to the doubling of the present capacity of the plant, for which plans and drawings are being prepared.

We are officially advised that there has been no action taken by the American Tin Plate Company in regard to the removal of the Star and Monongahela mills, at Pittsburgh. It is also untrue that the American Tin Plate Company contemplate the general centralization of their plants at a few points. No such move as this has ever been considered.

At the annual meeting of the stockholders of the Franklin Steel Casting Company, Franklin, Pa., held recently, the regular dividend of 5 per cent. and an extra dividend of 2 per cent. was declared. The following Board of Directors was elected: W. J. Bleakley, W. H. Forbes, D. H. Boulton, Charles Miller, J. W. Rowland, Robert McCalmont, Franklin; Charles W. Mackay, New York, and H. M. Wilson, Pittsburgh. The following officers were re-elected: Charles W. Mackay, president; J. W. Rowland, first vice-president; W. J. Bleakley, treasurer; Robert McCalmont, secretary, and W. B. Corinth general superintendent. This concern will make some extensive additions to their plant which will about double their capacity.

As noted in these columns some time since, the Susquehanna Iron & Steel Company, Columbia, Pa., will build a pipe mill joining their present tube plant. Ground will be broken in a short time.

The Sharon Steel Company, who are erecting an open hearth plant and blast furnace at Sharon, Pa., have placed a contract with the Morgan Construction Company of Worcester, Mass., for the erection of two rod mills, billet mill, shears, heating furnaces, reels, tables and other machinery complete for making No. 6 wire. The capacity of the plant will be 400 tons of wire per day. This is one of the largest contracts let by the Sharon Steel Company, and work will be pushed as fast as possible. As already noted the Sharon Steel Company will install about 200 wire nail machines.

Machinery.

The Union Foundry & Machine Company, South Side, Pittsburgh, have received an order from the Anaconda Copper Mining Company of Anaconda, Mont., for five slag pot cars of 36-inch gauge, and 12 ladle cars of standard 4-foot 8½-inch gauge, with extras.

The Weber Gas & Gasoline Engine Company, Kansas City, Mo., have contracted for a new $20,000 plant to be built at Sheffield, which is a suburb. It will be ready for occupancy before June 1. The structures will be built of stone, which will be quarried on the company's ground. The machine shop will be 75 x 250 feet and will be covered with a steel truss roof; the foundry, 80 x 120 feet; the pattern shops, 50 x 100 feet, and the offices, 30 x 50 feet. The force will be increased from 80 to between 150 and 200 men. The company organized in 1884, and then employed about a dozen men. Trade increased until the present site, at 405 to 413 Southwest Boulevard, is too small, although night and day shifts have been worked for a year. The business in 1899 showed an increase of 300 per cent. over that of 1898. Their customers in 1899 were in every State in the Union but four, and engines were sent to Australia, China, Japan, Ecuador, Mexico, British Columbia, Sweden, Norway, Brazil, Argentine Republic, Chili, France, Guatemala, England, Costa Rica and Panama. They have just increased their cap-

ital stock from $65,000 to $150,000. The officers are as follows: Geo. J. Weber, president; Geo. T. Moore, vice-president; R. G. Weber, secretary and treasurer; H. C. Weber, general superintendent.

The Inland Foundry Company, whose incorporation was announced last week, will succeed the Miller & Phelps Company at Chicago Heights, Ill. The leading interest in the company is owned by J. H. Olmes, recently of Pittsburgh, who is a practical foundryman.

The Cuban-American syndicate known as the Havana Dry Dock Company, who are to expend $400,000 on a dry dock at Havana, Cuba, to accommodate vessels up to 6500 tons, among other important contracts have awarded the Houston, Stanwood & Gamble Company of Cincinnati the principal order for engines to be used in connection therewith.

The Murray Iron Works Company of Burlington, Iowa, are celebrating their thirtieth birthday, the company having been incorporated February 1, 1870. During this period the works have been under the same management and have grown steadily and without experiencing any setbacks. They are now employing 400 men and are full of orders.

The Union Switch & Signal Company of Pittsburgh have awarded the contract for the erection of their new plant at Swissvale to James Stewart & Co., St. Louis, Mo. The iron buildings will be furnished by the Shiffler Bridge Company of Pittsburgh.

C. H. Bradley, Jr., & Co., steam engineers, Vandergrift Building, Pittsburgh, Pa., have received an order for two 250 horse-power Geary water tube boilers as manufactured by the Oil City Boiler Works, Oil City, Pa., and to be furnished to the Braddock Water Works, Braddock, Pa. These boilers are to be set on foundations furnished by the water company and connected up to the present smoke breeching, feed and steam lines ready for firing. The agreement calls for shipment in 50 days, and it is expected to have the boilers in operation about three weeks later. C. H. Bradley, Jr., & Co. are also building 11,000 horse-power Geary water tube boilers for the Sharon Steel Company, Sharon, Pa. Special attention has been given to the coal handling and ash conveying machinery at this plant, and it is expected to have the boiler installation very complete.

The New York Air Compressor Company report sales of over ten air compressors in as many days. These include a large duplex compressor for Japan and four compressors of 1200 cubic feet capacity for the Pennsylvania Railroad.

The machine tool concern heretofore known as the Bradford Mill Company, Cincinnati, Ohio, manufacturers of lathes, have been incorporated with a paid up capital of $100,000. The incorporators are J. R. Stewart, Geo. F. Stewart, W. T. S. Johnson, H. W. Krenzburg and Lewis N. Gatch. Additional buildings to the present plant will at once be erected and the working force materially increased.

Of the 11,000 horse-power Geary water tube boilers which C. H. Bradley, Jr., & Co., Vandergrift Building, Pittsburgh, are furnishing to the Sharon Steel Company, Sharon, Pa., 7000 horse-power will be set with Green chain grate stokers, and 4000 horse-power will be used on the blast furnace and operated by furnace gases.

The Pittsburgh Cigar Machine Company of Pittsburgh have been granted a charter with a capital of $15,000.

The Bair & Gazzam Company of Pittsburgh have just furnished a large lot of machinery to the Pittsburgh Wall Paper Company, whose works are at New Brighton, Pa.

The Riter-Conley Mfg. Company, of Pittsburgh have placed an order with the Chicago Pneumatic Tool Company for 25 pneumatic riveters. It is stated that 150 of these riveters are now in use in the plants of the Pressed Steel Car Company in the Pittsburgh district.

Hardware.

The Geneva Shears Company, capitalized at $50,000, $30,000 of which will be paid up in cash, have been organized at Geneva, N. Y. The following directors, all of Geneva, have been elected: D. H. Henry, D. H. Patty, W. G. Dove, H. Merrill, E. J. Cook, J. I. Maxwell, O. J. C. Rose, H. A. Goble and P. O'Malley. A directors' meeting will be held in the near future for the election of officers. Jas. W. Chapman, formerly of the Ohio Co-operative Shears Company, will act as general manager. The company expect to turn out 50 dozen shears a day at the start and increase as the business warrants. They have a patent joint for fstening the blades together, which is cone bearing, with a dished washer acting as a spring, giving an even cut from heel to point, it is stated, with perfect ease of adjustment, and non-liability of the joint working loose.

The L. S. Starrett Company, Athol, Mass., advise us that they have had all they could possibly do during the past year, and the outlook for the present year is most favorable. They have been adding new machinery constantly, and doing their best to fill all orders promptly.

Miscellaneous.

The Standard Underground Coble Company of Pittsburgh have recently closed contracts for cables with the Pittsburgh & Allegheny Telephone Company, Atlantic Coast Cable Company of Atlantic City, N. J., Bell Telephone Company at Philadelphia, Delaware & Atlantic Company of Philadelphia, and for the electric light cables for the immense plant of the Independent Electric Light & Power Company of San Francisco. The plant of the Standard Underground Cable Company of Pittsburgh is being run to utmost capacity in all departments night and day.

The Pontiac Sheet Metal Mfg. Company have been organized at Pontiac, Mich., with a capital of $40,000, to manufacture the Sherman dish washer and other specialties.

The receiver of the Godman Brake Company, Anderson, Ind., has sold the company's property to John L. Forkner of Anderson and B. Latchem, Joseph Lynn and M. S. Howe of Wabash. The purchasers will organize a company with a capital of $75,000, to be called the Anderson Malleable Iron & Mfg. Company. It is expected the plant will be put in operation early in February. Wind mills, water and oil tanks will be built, and all kinds of malleable iron work will be done.

The Kewanee Boiler Company, manufacturers of power and house heating boilers, Kewanee, Ill., are about to remove their plant to another location in the same city, to secure increased room for their growing business. The new site comprises 6 acres. The work of constructing the new buildings will be pushed as rapidly as possible. The plans contemplate four principal buildings, as follows: One large main boiler shop, 60 x 600 feet; a power house, machine shop and forge room; a foundry and an office and warehouse. The buildings will have steel truss frame work with slate roofs. In making the change the boiler company will begin work in a foundry of their own, their castings heretofore having been purchased of other concerns. The new works will have double the capacity of the present establishment. The ground vacated will be used by the Western Tube Company for additions to their plant, which have long been needed.

The Albany & Hudson Railway & Power Company have placed the contract with the Berlin Iron Bridge Company of East Berlin, Conn., for their power house and the several bridges required for the extension of their line from Albany to Hudson, N. Y. The line will require nine spans of plate girder bridges, varying in length from 30 to 65 feet, with a viaduct over the tracks of the B. & A. R. R. and the N. Y. C. & H. R. R. This viaduct will require something over 1000 tons, it being 2000 feet in length, the span over the B. & A. R. R. being 175 feet, pin connected, and that over the N. Y. C. & H. R. R. R. being over 200 feet in length. The work is to be completed in the early spring.

The United Metals Selling Company of Jersey City, N. J., have been incorporated with an authorized capital of $5,000,000, to deal in metals and ores and manufacture the same. The incorporators are Charles N. King, William S. Beaman, Allan W. Everetts, Herbert C. Larkins, and Eliot Tuckerman, all of Jersey City.

After 30 years' continuous running the plant of the Minor Fire Brick Company, at Empire, Ohio, was destroyed by fire on January 11. The insurance settlement having been effected the plant will be immediately rebuilt and its capacity doubled. The works have turned out in the last 30 years over 100,000,000 fire brick, which have been used by the leading iron and steel companies in this country, and it is said that never were more orders ahead on the books than to-day. The rebuilding is to proceed so promptly that the company expect to get out brick in from 60 to 90 days.

The new plants of the Harbison & Walker Company of Pittsburgh are rapidly nearing completion. No. 1, at Clearfield, has been running since December 1, No. 2 will start next week. No. 1 at Hays Station, near Homestead, will start about February 1, No. 2 February 15, and No. 3 early in March. When all are completed the company will have twelve plants, each complete within itself, giving a total actual (not theoretical) capacity of 341,000 high grade fire and silica brick per day, requiring, including coal, 78 cars of raw stock, making of finished material 60 cars, or a total of 138 cars daily. Owing to the high standard of quality attained by the Harbison & Walker Company, their brick are in demand wherever high quality is important. The policy of the company has always been to meet an increasing demand by the erection of modern, up to date plants, rather than by the purchase of those of bad location and worse construction, thus keeping in the highest condition of competitive excellence. Large exportations have been made to Russia, China and Cuba. A shipment made some time ago to a silver smelting company in Mexico had to be carried 100 miles inland through a mountainous district by pack saddle and mule train. When the material reached its destination the transportation charges alone amounted to 30 cents for each brick.

The plant of the Duquesne Mfg. Company, at Liberty avenue and Twenty-sixth street, Pittsburgh, manufacturers of Simpson's gas ranges and gas appliances, was completely destroyed by fire on Saturday night, January 20. The loss is estimated at about $25,000.

Information Wanted.—A correspondent wishes to know the address of the manufacturer of Brown's hydrostatic level and grading instrument.

Who makes machinery for manufacturing cardboard tubing?

The Iron and Metal Trades.

The situation is not yet quite clear, although good progress has been made during the last week in the direction of increased activity, coupled in some instances with a moderate concession in prices. In Foundry Iron, Cast Iron Pipe makers, East and West, have purchased upward of 25,000 tons of Pig Iron, largely in moderate lots. Some of this Iron was secured at prices which in some cases were 50 cents under recent prices, while for some of it full figures were put through. From miscellaneous quarters, too, there has been a wider inquiry, chiefly for early and prompt delivery. Foreigners are also showing more interest in our markets, and the point is not, apparently, far off when some export business can be done.

Some pretty fair transactions have taken place in Bessemer Pig in the Central West, two large Steel makers taking from 15,000 to 20,000 tons, and there have been some sales of Forge Iron. There are intimations, too, that good business has been done in Basic Pig, which is now offering for the second half of the year at $21.50 at furnace, in Western Pennsylvania.

In the Cast Iron Pipe market along the seaboard there have been some passages at arms between the independent shops and the consolidation. One of the former took an order for 3000 tons for Boston, while the latter captured a lot of 1500 tons.

In the Steel market the deadlock continues. The leading Billet makers and a large consuming interest which takes about 600,000 tons per annum have not yet come to an understanding. In the meantime Steel is offering by some works at $33 to $34 in the Central West. All talk of a "Steel war" in Pittsburgh is nonsense.

There are some indications of a revival in the buying movement in finished Iron and Steel. The management of the selling end of some of the Western concerns is vindicating the claims of those who look to the consolidations to put a stop to senseless competition. In former years the appearance of the dull season which extends from November 1 to March 1 has been the signal for a scramble for tonnage from which the mills emerged with order books loaded for months to come, with contracts often disgraceful as to terms. This time the large consolidations have simply let their mills slow down, and allowed the tonnage output to adjust itself to the requirements. The result is that in the Central West the prices have been well maintained; the mills have run at a profit, although idle a part of the time, and enter the busy season without a load of cut rate contracts. In other words, the dull season has not been allowed to demoralize the trade for many months to come.

One point is made in connection with coming price developments, and that is that the distributers and the trade generally have been buying very sparingly for a long time, in view of current high prices, and that therefore stocks are low in middle hands.

In the Rail trade there is prospect of some early conferences. The report that Henry C. Frick is negotiating for the Maryland plant is attracting attention. This company have just taken an order for about 6000 tons of Rails for Norway, which is regarded as a signal victory, since American makers are at a particular disadvantage in freights in that market.

There have been no new developments in the Plate trade, except that the Pueblo mill is now a factor in the Northwest.

From the Tin Plate trade come reports of a very heavy business, both the canning interests and the roofing trade being large buyers.

Some uncertainty exists in Copper. The event of the week has been the formation of the Union Selling Company, who are practically the Lewisohn-Rockefeller party.

A Comparison of Prices

At date, one week, one month and one year previous.

Advances Over the Previous Month in Heavy Type. Declines in Italics.

	Feb. 1, 1900.	Jan. 24, 1900.	Jan. 3, 1900.	Feb. 1, 1899.
PIG IRON:				
Foundry Pig, No. 2, Standard, Philadelphia	*$22.75*	$22.75	$23.25	$11.75
Foundry Pig, No. 2, Southern, Cincinnati	*20.25*	20.25	20.50	10.75
Foundry Pig, No. 2, Local, Chicago	23.50	23.50	23.50	11.50
Bessemer Pig, Pittsburgh	24.90	24.90	24.90	11.00
Gray Forge, Pittsburgh	21.25	21.50	21.25	10.00
Lake Superior Charcoal, Chicago	25.50	25.50	25.50	12.00
BILLETS, RAILS, ETC.:				
Steel Billets, Pittsburgh	*33.00*	34.00	35.00	17.25
Steel Billets, Philadelphia	*36.50*	36.50	37.50	19.25
Steel Billets, Chicago	nom	nom	nom	18.50
Wire Rods, Pittsburgh	nom	nom	50.00	26.00
Steel Rails, Heavy, Eastern Mill	35.00	35.00	35.00	19.00
Spikes, Tidewater	2.65	2.65	2.65	1.50
Splice Bars, Tidewater	2.30	2.30	2.30	1.15
OLD MATERIAL:				
O. Steel Rails, Chicago	19.00	19.00	19.00	8.00
O. Steel Rails, Philadelphia	**22.50**	21.50	21.00	11.50
O. Iron Rails, Chicago	*25.00*	25.00	25.00	13.75
O. Iron Rails, Philadelphia	*26.00*	26.00	27.00	13.50
O. Car Wheels, Chicago	**24.00**	21.00	21.00	13.00
O. Car Wheels, Philadelphia	**22.00**	20.50	20.50	10.75
Heavy Steel Scrap, Chicago	*17.50*	17.00	18.00	8.00
FINISHED IRON AND STEEL:				
Refined Iron Bars, Philadelphia	**2.20**	2.20	2.05	1.20
Common Iron Bars, Youngstown	2.15	2.15	2.15	1.05
Steel Bars, Tidewater	**2.40**	2.40	2.35	1.17½
Steel Bars, Pittsburgh	2.20	2.20	2.20	1.05
Tank Plates, Tidewater	*2.35*	2.35	2.40	1.45
Tank Plates, Pittsburgh	*2.20*	2.20	2.25	1.40
Beams, Tidewater	2.40	2.40	2.40	1.40
Beams, Pittsburgh	2.25	2.25	2.25	1.30
Angles, Tidewater	2.40	2.40	2.40	1.30
Angles, Pittsburgh	2.25	2.25	2.25	1.20
Skelp, Grooved Iron, Pittsburgh	1.90	1.90	1.90	1.20
Skelp, Sheared Iron, Pittsburgh	*2.35*	2.30	2.30	1.35
Sheets, No. 27, Chicago	3.00	3.00	3.00	2.00
Sheets, No. 27, Pittsburgh	**2.90**	2.90	2.80	1.95
Barb Wire, f.o.b. Pittsburgh	3.80	3.80	3.80	1.95
Wire Nails, f.o.b. Pittsburgh	3.20	3.20	3.20	1.50
Cut Nails, Mill	2.50	2.50	2.50	1.30
METALS:				
Copper, New York	**16.50**	16.50	16.00	17.00
Spelter, St. Louis	**4.62½**	4.55	4.35	5.40
Lead, New York	4.70	4.70	4.70	4.65
Lead, St. Louis	4.65	4.65	4.65	4.30
Tin, New York	**27.75**	26.50	25.50	25.00
Antimony, Hallett, New York	9.75	9.75	9.75	9.00
Nickel, New York	38.00	38.00	38.00	38.00
Tin Plate, Domestic, Bessemer, 100 lbs, New York	4.84	4.84	4.84	3.44

Chicago. (*By Telegraph.*)

Office of *The Iron Age*, 805 Fisher Building,
CHICAGO, January 31, 1900.

Trade generally shows more activity. Developments are confirming the predictions of those who stated in December that business would probably be quiet for a few weeks, but renewed buying could be expected in the latter part of January. An increasing demand is experienced for nearly all kinds of merchandise for early delivery. Numerous consumers appear to be forced into the market for their actual necessities. They held off as long as they could, hoping for lower prices, but can wait no longer. The lull has helped many manufacturers to get a little closer to their orders, and deliveries can now be promised more promptly than in November or December. The prospects are excellent, for not only continued activity, but for a much larger volume of business.

Pig Iron.—A better demand has sprung up, and sales agents report quite a large tonnage now being booked. Transactions are principally in Southern Iron, as very little local or Lake Superior Charcoal Iron is available for the deliveries desired. Consumers are buying almost entirely for deliveries during the next three or four months. It appears that the consuming trade was not as well covered for the first half of this year as sellers had been led to believe. The orders in some cases called for considerable quantities, contracts having been made for several lots of 3000 tons or more. Rumors are prevalent of concessions by certain Southern companies, but these cannot be verified. Special circumstances are connected with some of the sales on which concessions are said to have been made, and the presumption is strong that furnace companies are asking full quoted prices. Some of the companies alleged to have cut prices are known to be much in arrears on deliveries on old contracts. We quote for cash as follows:

Lake Superior Charcoal	$25.50 to $26.00
Local Coke Foundry, No. 1	24.50 to 25.00
Local Coke Foundry, No. 2	23.50 to 24.00
Local Coke Foundry, No. 3	22.50 to 23.00
Local Scotch, No. 1	25.00 to 25.50
Ohio Strong Softeners, No. 1	25.50 to 26.00
Southern Silvery, according to Silicon	25.50 to 27.00

Southern Coke, No. 1	22.85 to	23.35
Southern Coke, No. 2	21.85 to	22.35
Southern Coke, No. 3	20.85 to	21.30
Southern Coke, No. 1 Soft	22.85 to	23.35
Southern Coke, No. 2 Soft	21.85 to	22.85
Foundry Forge	20.85 to	....
Gray Forge and Mottled	20.85 to	....
Southern Charcoal Softeners, according to Silicon	21.85 to	25.85
Alabama and Georgia Car Wheel	24.85 to	25.85
Malleable Bessemer	25.00 to	26.00
Standard Bessemer	.... to	....
Jackson County and Kentucky Silvery, 8 per cent. Silicon	32.30 to	32.80

Bars.—The market is more active, although transactions are still confined to moderate quantities. No large contracts have been placed during the week, as far as can be ascertained. The fact that buyers are asking for deliveries as quickly as possible shows that they are being driven to supply their necessities. The increasing volume of business of this character indicates that still heavier trade is to be expected. Inquiries are being received for large lots, and if prices continue firm it is expected that contracts will soon be made for long deliveries. Manufacturers continue to quote mill shipments at 2.30c. to 2.40c., Chicago, for Common Iron, 2.35c. to 2.45c. for Soft Steel Bars, and 2.65c. for Bands. Jobbing houses are enjoying a steadily increasing trade. Some of them report the past week the biggest they ever had in point of shipments. They find the demand for carload lots increasing. Small lots from stock are quoted at 2.90c. for Bar Iron, 2.60c. to 2.65c. for Soft Steel Bars and 3.90c. to 4c. for Norway and Swedish Iron.

Car Material.—Orders aggregating over 7000 cars are now under negotiation. They will compel large purchases of material as soon as placed. An exceptionally strong demand is noted for Axles, on which manufacturers are sold up far into the future.

Structural Material.—No large contracts have recently been made, but it is expected that some of the heavy deals pending will soon be closed. A good run of small orders is reported. The mills are in excellent shape, their sales exceeding shipments. All prices are firm, except Plates. Mill shipments are quoted as follows, Chicago delivery: Beams, Channels and Zees, 15-inch and under, and Angles, 3 to 6 inches, 2.40c.; Beams, &c., 18 inches and over, and Angles over 6 inches and under 3 inches, 2.50c.; Tees, 2.45c.; Universal Plates, 2.45c. to 2.60c. A good demand is reported from the local yards with prices of Beams and Channels quoted at 2.90c. to 3c.; Angles, 2.70c. rates, and Tees, 2.85c.

Plates.—Orders for mill shipments are more numerous. The largest sale reported called for 1000 tons, beginning delivery in June. The Pueblo Plate mill is securing considerable business which would ordinarily go through the hands of sales agents here. The demand from store is light. Prices are still irregular, some of the mills making Narrow Plates quoting down as low as 2.40c., Chicago. Ordinary mill shipments, Chicago delivery, may be quoted as follows: Tank, 2.50c. to 2.60c.; Flange, 2.70c. to 2.90c.; Marine, 3c. to 3.25c.; Fire Box, 3.30c. to 5½c. Jobbers quote Tank from store at 2.80c. to 3c.; and Flange, 3c. to 3.25c.

Merchant Pipe.—The local trade is improving, and the outlook is encouraging for a much larger volume of business. Carload lots of Black Merchant Pipe are quoted at 50, 10 and 5 to 50 and two 10's, and Galvanized at 57 and two 10's.

Sheets.—Manufacturers' agents report the demand steadily growing better. Good sales are being made of both Black and Galvanized Sheets. The movement to consolidate the mills is said to be progressing toward a successful result. Galvanized Sheets have advanced at least $1 per ton on lowest prices through the reduction of the freight allowance. Mill shipments of No. 27 Black are quoted at 3c. to 3.15c., Chicago, and Galvanized Sheets at 75 to 75 and 5 per cent. Prices on small lots from local warehouses do not respond as they should to the firmness in mill quotations. This is especially the case on Galvanized Sheets, which are quoted by some jobbers down to actual mill rates. Usual quotations by jobbers are 3.25c. to 3.40c. for No. 27 Black, and 70 and 10 per cent. off on Galvanized.

Merchant Steel.—A much better inquiry has developed. The carload business is good, and orders are being placed more frequently for lots running up to 500 tons. Specifications are also improving. Mill shipments, Chicago delivery, are quoted as follows: Smooth Finished Machinery Steel, 2.95c. to 3.05c.; Smooth Finished Tire, 2.80c. to 3c.; Open Hearth Spring Steel, 3.60c. to 3.75c., base; Toe Calk, 3.20c. to 3.50c., base; Sleigh Shoe, 2.75c. to 3c.; Cutter Shoes, 3.45c. to 3.65c.; Ordinary Tool Steel, 7c. to 7½c.; Special, 13c. and upward.

Rails and Track Supplies.—Standard Rails continue to be quoted at $35 to $40, according to quantity, but no transactions are reported. A large week's business has been done in Light Rails, probably the largest for several months. Included among such sales were 800 tons for Japan and smaller quantities for other countries. Light Sections are quoted at $35 to $40, according to Section. Prices of Track Fastenings are as follows: Steel Fish Plates, 2.25c. to 2.50c.; Iron Fish Plates, 2.30c. to 2.50c.; Spikes, 2.65c. to 2.75c.; Track Bolts, with Hexagon Nuts, 3.95c. to 4c.; Square Nuts, 3.80c. to 3.85c.; Steel Links and Pins, 3.20c.; Iron Links and Pins, 3.15c.

Old Material.—The market is weak on almost every class of Old Material. Consumers find the supply liberal and their bids accepted at reduced rates. Old Car Wheels are a notable exception. Approximate market prices are as follows, per gross ton:

Old Iron Rails	$24.00 to	$25.00
Old Steel Rails, mixed lengths	19.00 to	20.00
Old Steel Rails, long lengths	21.50 to	22.50
Relaying Rails	28.00 to	30.00
Old Car Wheels	24.00 to	24.50
Heavy Melting Steel Scrap	17.50 to	18.50
Mixed Steel	12.50 to	13.00
Iron Fish Plates and Angle Bars	24.00 to	25.00
Steel or Mixed Iron and Steel ditto	20.00 to	21.00
Iron Car Axles	27.00 to	28.00
Steel Car Axles	24.00 to	25.00
No. 1 Railroad Wrought	23.00 to	23.50
No. 2 Railroad Wrought	19.00 to	20.00
Shafting, Iron and Soft Steel	21.00 to	22.00
No. 1 Wrought	16.00 to	17.00
No. 1 Country Wrought	15.00 to	15.50
No. 1 Mill	11.50 to	12.00
No. 2 Mill	7.50 to	8.00
No. 1 Busheling	14.00 to	14.50
No. 2 Busheling	9.50 to	10.00
Iron Car Axle Turnings	14.50 to	15.00
Soft Steel Car Axle Turnings	13.50 to	14.00
Machine Shop Turnings	12.00 to	13.00
Wrought Drillings	11.50 to	12.00
Cast Borings and Drillings	9.00 to	9.50
Mixed Borings and Turnings	9.00 to	9.50
No. 1 Boilers, cut	13.50 to	14.00
No. 2 Boilers, cut	6.00 to	7.00
Boiler and Ship Scrap	15.00 to	16.00
No. 1 Cast	14.00 to	15.00
No. 2 Cast	9.50 to	10.00
Railroad Malleable Cast	15.00 to	15.50
Agricultural Malleable Cast	14.00 to	14.50

Metals.—Prices show practically no change on Copper or Lead. Carload lots of Lake Superior Copper are firm at 16⅞c., and Casting brands, 16⅝c., while Pig Lead is held at 4.70c. for Desilverized. Spelter has advanced, and 4.55c. probably represents the minimum.

Tin Plates.—An improved demand is reported, the condition of trade being much better than usual in midwinter, both in Roofing and Bright Plates. Neither jobbers, manufacturing consumers nor retail merchants appear to be influenced against buying by present prices. The free purchases now being made would indicate great confidence in a heavy spring trade. Prices are unchanged.

Pittsburgh.

Office of *The Iron Age*, Hamilton Building, Pittsburgh, January 31, 1900.

(By Telegraph.)

Pig Iron.—In the past week there have been sales of 15,000 to 20,000 tons of Bessemer Pig Iron by Valley furnaces at $24, at furnace, equal to $24.90, Pittsburgh. The market is strong at this price, only an occasional small lot from an outside furnace being offered at lower figures. Two leading consumers have bought Bessemer Iron during the past week. The market on Gray Forge is strong and prices seem to be higher, with some furnaces quoting on the basis of $21.50, Pittsburgh. One leading interest has bought about 7000 tons of Forge in the past week. Southern and Virginia Forge is offered in this market at about $20.60, Pittsburgh, and Eastern Forge at $20.75 to $21. Local Forge is $21.25 to $21.50. Foundry Iron is dull. We quote Gray Forge, $21.50, the Association price; Bessemer, $24, both at Valley furnace. No. 2 Foundry, $22.25 to $22.50 for Southern; $23 to $23.50 for Northern; Southern Gray Forge, $20.60; Eastern Forge, $20.75 to $21; Local Forge Iron, $21.25 to $21.50; Bessemer, $24.90, the Association price, all f.o.b. Pittsburgh. We note sales of 15,000 to 20,000 tons of Bessemer at $24, Valley, also about 7000 tons of Gray Forge at $21 to $21.25, f.o.b., most of this Iron having been sold at $21. Also 500 tons of Gray Forge at $21.25, f.o.b. Pittsburgh.

Steel.—The market continues dull, buyers holding off waiting for lower prices. The recent agreement by which the price of Billets was fixed at $35, f.o.b. Pittsburgh, is

not being strictly observed, as Steel has been offered at delivered prices equivalent to $33 and $34, Pittsburgh. We quote Bessemer Billets at $33 to $34, but also note that some mills are quoting $35. Basic Open Hearth Billets are $42 to $43, and up to $45 for special sizes and high carbons.

Sheet Bars.—The market is very dull. We quote nominally at $36, at mill.

Muck Bars.—We quote Standard Grade Muck Bars at $33 to $33.25, f.o.b. Pittsburgh. Some grades are being offered, we are advised, as low as $32.50, Pittsburgh.

Spelter.—We quote at 4.60c. to 4.65c., f.o.b. Pittsburgh.

(By Mail.)

The demand for Finished Material continues somewhat quiet, but prices are strong. It is the policy of the larger concerns to restrict production, in place of trying to run all their plants full and reducing prices to sell their output. In the past week several plants have been closed, for the reason that their particular kind of product is out of season, and the owners of the plants referred to prefer to keep them idle until demand improves. The Pig Iron market is strong, and prices are apparently firm on the basis of $24, at Valley, for Bessemer. The Steel market is quiet, and buyers are still holding off waiting for prices to recede. Reports of a slump in prices of Plates are untrue. Coke continues very active, with fancy prices being paid for small lots for prompt shipment. It is the general belief that tonnage in Finished Material will show considerable improvement within a month or two. In some lines we are advised that tonnage for January was considerably better than in December.

Plates.—Reports of a fierce fight between two leading Plate mills and demoralization in prices are absurd. No such condition exists. It is true that on specially large orders there have been some comparatively low prices made on Plates, but the market is no lower than it was a week ago. For general run of orders, Tank Plate, ¼-inch and heavier, is quoted at 2.25c., at mill. In special cases this price has been shaded for very desirable orders and on narrow sizes. Shell is quoted at 2.40c. to 2.50c.; Flange, 2.50c. to 2.60c.; Marine, 2.60c. to 2.70c.; Fire Box, 3c. to 3.25c., depending on quality. The demand for Plates continues quiet.

Structural Material.—No specially large contracts have been placed since the New York Central order, of about 13,000 tons, none of which, however, came to Pittsburgh. There is a good deal of work in sight, one railroad in West Virginia figuring on considerable tonnage. We quote: Beams and Channels, 15-inch and under, 2.25c.; 18, 20 and 24 inch, 2.35c.; Angles, 3-inch and up to 6 x 6, 2.25c.; Angles, under 3-inch, 2.50c.; Tees, 3-inch and larger, 2.30c.; under 3-inch, 2.50c.; Zees, 3-inch and larger, 2.25c.; Grooved Rolled Plates, 2.35c. to 2.50c., Pittsburgh.

Bars.—The tonnage being placed in both Iron and Steel Bars is light, and some of the Bar mills are in urgent need of specifications. In spite of this condition prices are reasonably firm, and it is evidently the intention of the larger concerns to shut down mills if necessary, in preference to lowering the price on Bars. Buyers have evidently decided that prices are about as high as they will go, and any change would be toward lower figures. With this in view, they will place orders only for small lots for immediate requirements. We quote Common Iron Bars at 2.15c., Valley mill, and Steel Bars at 2.20c. to 2.25c., Valley mill, half extras. Local mills quote Steel Bars at 2.25c., minimum, and we are advised this price is being rigidly held. Refined Iron Bars made by local mills are quoted at 2.40c. to 2.50c.

Ferromanganese.—We quote small lots for prompt shipment at $125, at mill.

Sheets.—Tonnage in Sheets shipped out by the mills in January has been considerably in excess of December. As noted last week, the Sheet trade has shown considerable improvement, both in demand and prices. Work is still being done on the combination, and it is generally believed it will be put through. This is undoubtedly part of the cause of improved demand, buyers trying to cover in anticipation of higher prices. Several leading mills are holding No. 27 Sheets at 3c., and No. 28 at 3.10c., at mill, and are entering orders at those prices. Other sellers are naming slightly lower figures, and we quote No. 27 Black Sheets, one pass, at 2.90c. to 3c.; No. 28, 3c. to 3.10c. We quote Galvanized Sheets at 75 and 5 per cent., 15c. freight.

Steel Rails.—The market is quiet, and we quote at $35, at mill, for Standard Sections.

Merchant Steel.—Buyers are placing orders only for small lots, believing that prices are as high as they will go, and may possibly be lower. The mills are running mostly on old contracts, specifications on which are coming forward quite freely. We quote: Toe Calk, 2.75c., base; Tire, 2.50c. to 2.60c.; Open Hearth Spring, 3.25c.; Plow Slabs, 2.75c. to 3c.; Machinery Steel, 2.50c.; Sleigh Shoe, 2.75c. to 3c.; Cutter Shoes, tapered and bent, 3.75c. to 4c.; Rolled Lay Steel, 3.75c.; Hammered Lay Steel, 4.50c.; Tool Steel, 7c. and upward, freight allowance not to exceed 25c.; terms, except Tool Steel, 30 days, net cash.

Tubular Goods.—There is nothing new to report in the Pipe trade. Demand for January has shown some improvement over December. Prices are unchanged, and we quote Black Pipe in carload lots 50 and 10 and 10 per cent., and Galvanized Pipe at 57, 10 and 10 per cent., delivered. Small lots of Black are quoted at about 50 and 10 per cent. at mill, and Galvanized 57 and 10 per cent. at mill. We quote Screw and Socket Joint Casing at 37½ per cent.; Inserted Joint, 32½ per cent., with an optional 5 per cent. to dealers. We quote Boiler Tubes as follows: 1¼-inch and 1½-inch Iron, 40 per cent.; Steel, 40 per cent.; 1¾ to 2½ inch Iron, 50 per cent.; Steel, 55 per cent.; 2¾-inch and larger Iron, 52½ per cent.; Steel, 55 per cent., with an extra 5 per cent. in carloads; less than carloads, f.o.b. maker's mill, Pittsburgh, while carloads are delivered.

Skelp.—The Skelp market is quiet. We quote Grooved Iron and Steel at 1.90c. to 2c., and short pieces at 2.25c. to 2.35c.

Connellsville Coke.—Last week there were 19,371 ovens in the Connellsville region active and only 621 idle, the output being 207,263 tons, which is the greatest record for production ever made in the Connellsville region for one week. All the large Coke concerns have their entire product under contract, and Coke for prompt shipment is very hard to obtain, and high prices are being paid for it. Small lots of emergency Furnace Coke have sold up to $3.25 to $3.50 a ton, while Foundry Coke, we are advised, has sold at even higher prices. The market as regards prices is somewhat difficult to gauge, but Foundry Coke could be quoted at $2.85 to $3.50, depending on the order and amount of Coke involved. Furnace Coke might be quoted at $2.75 to 3.50, but it would be very difficult to get Coke at the lower prices. The business of the H. C. Frick Coke Company in 1899 was much the largest in any one year in the history of that great concern. Their shipments last year of Furnace, Foundry and Crushed Coke were 385,201 cars. Averaging this at 20 tons to a car, it gives this concern shipments of more than 7,500,000 tons of Coke.

Harry A. Ross, formerly of Lincoln Foundry Company of Pittsburgh, Pa., and John C. Bole, formerly secretary and treasurer of Baker Forge Company, now Steel Car Forge Company, of Ellwood City, Pa., have formed a copartnership under the firm name of Bole, Ross & Co., with offices in rooms 602 and 624 Park Building, Pittsburgh, where they will be pleased to see their friends. They will carry on a general business of Iron and Steel factors.

Cleveland.

CLEVELAND, January 30, 1900.

Iron Ore.—The producing interests here and elsewhere are now busy in the compilation of the figures representative of the shipments of each individual mine during the season of 1899—the statistics of last resort as it were—upon which are based the most carefully compiled estimates of next season's output. From the returns thus far at hand it would seem that the all rail shipments have in some instances fallen somewhat behind expectations, and it would, therefore, not prove surprising if the total movement of the year is found to be a trifle short of the 18,500,000 tons, which has for weeks past been the accepted estimate. That the disclosure of these statistics will stimulate many additional transactions is unlikely. Scattering sales continue, principally to consumers who have just discovered that their needs are not entirely supplied, but, as a rule, they are for small lots. Some of the sales agents look for still further activity in the early spring, but this seems unlikely in view of the aggregate of Ore covered last autumn. As for the transportation end of the business the Ore men are out of the market, and it is extremely unlikely that any more Ore will be covered by season contracts. There is some Escanaba tonnage offering at the old rate, but the vessels which trade to Lake Superior are pretty well provided for. There would appear to be not a little ground for hope for an early opening of navigation. Reports from various points on the lakes indicate that there is comparatively

little ice in the connecting rivers, and unless some totally unexpected conditions should develop there is reason to hope that the boats will move early. Another source of satisfaction to the Ore shipper is found in the fact that many more of the larger class of vessels than ever before will go directly into the Ore trade at the opening of the season. Heretofore it has been customary for almost the entire fleet to make one or two trips with grain, and the dangers of this plan were well illustrated last season when the strike of grain shovelers at Buffalo delayed many vessels for several weeks after they should have been engaged upon their Ore contracts. The weather of the past few weeks has been exceptionally favorable for handling the Ore on Lake Erie docks, and the movement to the furnaces has been very heavy. The indications are that the docks will be in the best of shape when the first cargoes arrive in the spring.

Pig Iron.—The opening of the market at Chicago and some other points, which occurred last week, will, it is doubted not, soon be followed by a stimulation of activity here. As yet there have been few sales of the Forge and Foundry grades, although some livelier inquiry is reported, indicating a growing restlessness on the part of consumers. There is, of course, little or no inquiry for Bessemer. Practically all the iron in sight up to July 1 has been covered, and it is thought unlikely that there will be much additional buying for a month or two. About the same proportion of Southern Iron, as usual, is coming into this market. Lake Superior Charcoal appears to be a much sought commodity. The demand is active and the prices strong. Some prominent sales agents have not a ton of this grade on Lake Erie docks, and have been compelled to procure supplies by rail in order to satisfy the immediate needs of customers. The car situation is much improved, and furnaces are getting Ore in a much more satisfactory manner than for weeks past. The chief annoying feature of the situation, however, is found in the Coke situation. Energetic efforts are being put forth to improve the supply, but so far they have proven unsuccessful. The banking of furnaces for intervals of two or three days owing to a scarcity of Coke has become quite a common occurrence, and, worse still, there is small prospect that the furnaces which have recently been refitted and have not a supply of fuel on hand will be able to resume for some time. Generally speaking, the Pig Iron situation is very firm. There has been no change whatever in prices, which must be considered rather remarkable in view of the manner in which the buying has held off.

Finished Material.—Another quiet week must constitute the record of the past seven days. There has been little inquiry and a light order mail. The best transaction of the week is found in the sale of about 2800 tons of Bars. A small sale of Rails for electric interurban service is also reported with the understanding that it will shortly be followed by a considerably larger order from the same source. It is yet too early it seems for any activity in Structural for building purposes, and this feeling may be accentuated by the cold weather of the past week. A good sized contract, which was to have been placed during the week for the material for a new building at Toledo, has, it is stated, been placed in abeyance. Sales of Plates have been light, but the market is firm at the prices last quoted. There has not been the scramble for business which has characterized some of the Eastern mills, and so far as can be learned no sales have been made under 2.25c. No marked changes are noted in Sheets or Pipe.

Old Material.—There has been a slight shading off in the prices of almost all grades of Scrap, but it has been so slight as to cause no material change in the quotations as last submitted. The strike of coremakers, which has suspended operations at almost all the local foundries, will ultimately, of course, not be without some effect on this and other markets if it continues for any length of time.

Cincinnati. (*By Telegraph.*)

Office of *The Iron Age*, Fifth and Main streets,
CINCINNATI, January 31, 1900.

The pulse of the market has been somewhat faster than for some weeks past, and the volume of new business has been considerably larger so far as Southern Iron goes. In addition to a fair run of small to medium sized orders there have been some good sales of Basic Iron and also several thousand tons of No. 2 Soft and No. 4 Foundry sold to the Pipe company. There is a strong suspicion, however, that a portion of this increased activity is due to selling at the minimum quotations herewith. Some of the sellers claim to have received the maximum, but others confess to the lower price. There is a pretty fair inquiry, and the prospect for a further activity is good. The weakening of the Scrap market is having its influence in Forge grades and No. 4. Northern Irons have been inactive, and while it can hardly be said that they are lower in actual selling value, yet there is a settling of the price-list from the fancy level to which it had been raised, and so far as Coke brands are concerned they are quotably $1 lower. While the weakness observed is more than the bull side of the market expected yet it does not materially affect the general situation, and a big decline is not at all expected. We quote, f.o.b. Cincinnati:

Southern Coke, No. 1	$21.50 to $21.75
Southern Coke, No. 2	20.50 to 20.75
Southern Coke, No. 3	19.50 to 19.75
Southern Coke, No. 4	18.75 to 19.25
Southern Coke, No. 1 Soft	21.50 to 21.75
Southern Coke, No. 2 Soft	20.50 to 20.75
Southern Coke, Gray Forge	18.75 to 19.25
Southern Coke, Mottled	18.75 to 19.25
Ohio Silvery, No. 1	.... to 30.00
Ohio Silvery, No. 2	.... to 29.00
Lake Superior Coke, No. 1	23.00 to 24.00
Lake Superior Coke, No. 2	22.00 to 23.00

Car Wheel and Malleable Irons.

Standard Southern Car Wheel, Chilling Grades	$25.75 to $26.25
Standard Southern Car Wheel, No. 2	24.75 to 25.25
Lake Superior Car Wheel and Malleable	25.50 to 26.50

Plates and Bars.—The market is rather quiet, though firm and unchanged. We quote, f.o.b. Cincinnati: Iron Bars, carload lots, 2.25c., with half extras; small lots, 2.60c., with full extras; Bar Steel, in car lots, 2.50c., with half extras; small lots, 2.95c., with full extras; Iron Bar Angles, 1½ x 3-16 inch and larger, in car lots, 2.55c.; small lots, 2.80c.; Sheets, No. 10, 3c. to 3.15c.; No. 27, Stove Pipe, 3.25c.; No. 27, Steel, 3.35c.; Plates, 2.75c. to 3c.

Old Material.—The market is rather dull and still weak. Iron Rails are quotably $1 lower. We quote, f.o.b. Cincinnati: No. 1 Wrought Railroad Scrap, $20 to $21 per net ton; Cast Scrap, $12 to $13 per gross ton; Axles, $25 per net ton; Iron Rails, $24 per gross ton; Car Wheels, $22 to $22.50 per gross ton.

The well-known Pig Iron firm of Thomas A. Mack has been dissolved. Mr. Mack retires February 1, and the business will hereafter be continued under the style of Thomas A. Mack & Co. by L. F. Walter and B. A. Wallingford. Both of these gentlemen have been actively connected with the old firm a number of years.

St. Louis. (*By Telegraph.*)

Office of *The Iron Age*, 1205 Chemical Building,
ST. LOUIS, January 31, 1900.

Pig Iron.—Attempts to bear Pig Iron have lately been made, and interests short on Iron offered to sell under market in the hope of covering their wants. Thus far no change whatever is noted in this market, and while advances are not looked for, on the other hand no reductions are predicted. Inquiries are gradually increasing, but purchases are generally for quick use and tonnage involved is moderate. Carload and 50-ton lots are the order of the day. Both buyers and sellers seem a unit in the opinion that there is no need for forcing the market, but it would seem that the question of the future supply should be weighed. Furnaces in but few cases have tonnage booked well ahead, and are not yet able to put anything on the open market. The railroads are in evidence with advanced rates, and February 1 is to bring an increase of 15c. per ton on Connellsville Coke, netting 40c. advance, dating January 1. We quote on cars St. Louis:

Southern, No. 1 Foundry	$22.25 to $22.50
Southern, No. 2 Foundry	21.25 to 21.50
Southern, No. 3 Foundry	20.25 to 20.50
No. 1 Soft	22.25 to 22.50
No. 2 Soft	21.25 to 21.50
Gray Forge	20.00 to 20.25

Bars.—Some comfortable trading is being done in Bars and in contrast to rather quiet conditions, which prevail at first of the year. But little advance buying is indulged in, as higher prices are not anticipated. Filling in of desired sizes is being done as a matter of necessity, and these purchases have aggregated a tonnage better than expected. The market here shows no soft spots, but is considered firm. Mill quotations on Iron remain at 2.35c., base, half extras, East St. Louis, in carload lots. No change has taken place in jobbers' prices, which are 2.75c. to 2.90c., base, full extras, as to quantities and assortment. Steel Bars are now definitely quoted by mills at 2.40c., base, half extras, in carload lots, East St. Louis. Jobbers' price is 3c., full extras.

Rails and Track Supplies.—A fair amount of business is passing in Track Supplies, but nothing particularly worthy of mention. We quote: Splice Bars, Steel, 2.55c.; Iron, 2.55c.; Track Bolts, with Square Nuts, are

now 3.70c.; with Hexagon Nuts, 3.90c.; Spikes, 2.75c.; Steel Links and Pins, 3.20c.

Pig Lead.—Market remains as last week in all grades. Chemical 4.65c. bid, and Soft Missouri 4.60c. Supply is apparently not equal to demand. Lead Ore lost the 25c. advance last reported, and sold at $28 per 1000 lbs.

Spelter.—Still higher prices were obtained this week, something over 100 tons having brought 4.62½c. Bids for 4.60c. were turned down. Inquiries for the next three months' supply are coming in, but no one in Spelter line is willing to quote beyond February. On the other hand, Zinc Ore suffered a reduction of $1 in top price. Selling figure fell to $34.

Philadelphia.

Office of *The Iron Age*, Forrest Building, PHILADELPHIA, PA., January 30, 1900.

(By Telegraph.)

There is little or no change in the market since yesterday. A great deal of material appears to be wanted, but prices are confusing and buyers hesitate to place orders. Almost anything on the list except Old Material can be bought at less money than would have been possible a week ago, yet it would be misleading to say that prices are weak; they are unsettled and that is about all there is to it. If confidence in prices was stronger a large business would be done immediately. As it is, buyers seem disposed to hold off to the last moment.

(By Mail.)

The last week of the first month of the year has been completed without finding any definite change in the condition of the Iron trade. It is encouraging to find, however, that the dull period has been passed without developing any material weakness, except that Plates, Sheets and Billets are a trifle lower than they were a month ago, although during the past day or two there has been a slight hardening, indicating the probability of a check to the declining tendency, even if there is no advance. The situation is extremely difficult to gauge at the present time, however, but at the moment the feeling favors improvement, and with a very little encouragement in the way of new buying it is quite likely that prices would show increased strength. That there will be a large volume of business appears to be conceded on all sides. Whether prices will be higher or not is a matter in which opinions differ. Some of the most experienced men in the trade, men who have been close observers for years past, incline to the opinion that in 60 days from now prices will be higher than they are now. They are rather inclined to be conservative temporarily, but they believe that conditions will soon begin to assert themselves, and by the time mentioned the situation they think will be perceptibly stronger. They base their ideas on the fact that business has been good all through the two dullest months of the year, and as there is a decided improvement in the tone and character of inquiries they conclude that renewed activity is simply a question of time. To this may be added the important fact that in the meanwhile stocks have not increased, and that in most cases deliveries have been taken with the most satisfactory promptness. It is believed, therefore, that the second month of the year will develop an increasing demand, and with that steady if not firmer prices.

Pig Iron.—There are indications of a better demand in the near future, as buyers are beginning to show considerable interest in the market. Large lots of Iron are wanted, and orders could be had if buyers were disposed to make concessions; the difficulty, however, is to decide how much the concession should be. In some cases 25c. and in others 50c. rebate has been made without securing very much business, although buyers may still decide to come in, as sellers appear to have drawn a line at the extreme figure. It should not be understood that there has been an indiscriminate reduction to the extent named, as quite a number of furnaces are as firm as ever at the prices ruling for a month past, but there are others who are less rigid and who make their figures accordingly. It is noticeable, however, that prices are easier at points which are accessible to Southern furnaces, so that there is again a recurrence of lower rates at points which are south or west of Philadelphia, indicating pretty clearly that the Southern group of furnaces are not doing as well in other directions as they were some time ago. Still it must be stated that the trade are not inclined to take a pessimistic view of the situation, but are disposed to think that it is a favorable indication to find that buyers are taking hold again, and that it only requires a very moderate rebate to bring in some very important orders. As a rule, however, prices average lower than they did a week ago, and may now be quoted about as follows for seaboard or nearby deliveries: No. 1 X Foundry, $25 to $25.50; No. 2 X Foundry, $23 to $24; No. 2 Plain, $22.25 to $22.75; Standard Mill Iron, $20.25 to $20.75; Basic, $22.50 to $23; Bessemer, nominal, $23 to $24; Low Phosphorus, $27 to $28, and Charcoal Iron, $28 to $30.

Billets.—There is a fair inquiry, some for very considerable sized lots; but there is not much chance for immediate business, as asking prices (about $37) are considered too high to warrant free purchases.

Muck Bars.—Business is very quiet, and prices nominal at $30.50 to $30.75, f.o.b. cars sellers' mills.

Plates.—There is a good deal of business being done in Plates, mostly in lots of 50 to 200 or 300 tons each, besides which some very important orders are under negotiation for the shipyards. The volume of business is likely to be very large during the spring and summer months, but there is a disposition to push sales, so that prices are not as firm as they should be. Various reasons are assigned for this change of attitude, but there is no dobut that pressure from the West, as well as from some of the local mills, is mainly responsible for the change of front. Asking prices are about as follows for seaboard or nearby deliveries, but lower prices have been named in special cases: Steel Plates, ¼-inch and thicker, 2.40c. to 2.45c.; Shell, 2.50c. to 2.60c.; Flange, 2.75c. to 2.85c.; Fire Box, 3.10c. to 3.15c.; Charcoal Iron Plates, C. H. No. 1, 3c.; Best Flange, 3.50c.; Fire Box, 4c.

Structural Material.—There is no change calling for special remark. Mills have plenty of orders on their books, and plenty more in sight, so that business is proceeding in a way that is entirely satisfactory. Prices steady, and for seaboard and nearby deliveries are quoted as follows: Beams and Channels, 15 inches and under, 2.40c.; Angles, 3 to 6 inches, 2.40c.; Zee Bars, 2.40c., f.o.b. Philadelphia; Angle Bulbs and Deck Beams, 2.63c.; Tees, 2.45c.

Bars.—The demand for Bars is very heavy, and prices have averaged probably half a tenth higher than during the week previous. The regular monthly meeting of the Eastern Bar Iron Manufacturers' Association was held in this city on Friday, the result of the meeting being a reaffirmation of prices—viz.: 2.20c. at mill for Best Refined Iron. It is said that the meeting was somewhat lively, owing to the fact that some of the members were charged with shortcomings in the matter of prices. The breach was healed, however, and on promises of strict faithfulness in the future these little lapses from the path of duty were forgiven if not forgotten. Objections were also made by some of the members in regard to some Iron being called Common Iron, some called Refined Iron, &c. It was, of course, conceded that there is Common Iron and there is Refined Iron, but it was claimed that the difference in name is frequently used as a loophole for something which does not strictly pertain to the quality of the Iron. The result of the meeting, however, appears to have secured promises for strict adherence to card rates, which will no doubt be carried out if the demand is large enough to keep them all busy. Meanwhile, there is no difficulty in selling at prices as follows for Philadelphia or nearby deliveries: Ordinary Iron, 2.07½c. to 2.10c.; Refined Iron, 2.20c.; Test Iron, 2.30c.; Steel Bars, 2.50c. to 2.60c.

Sheets.—There is quite an improvement in the demand, and mills are expecting full activity in the near future. Prices are unchanged and are steady as last quoted—viz.: (Common Sheets two-tenths less): No. 10, 2.75c. to 2.85c.; No. 14, 2.95c.; No. 16, 3c.; Nos. 18-20, 3.05c.; Nos. 21-24, 3.15c.; Nos. 26, 27, 3.25c.; No. 28, 3.35c. to 3.45c.

Old Material.—Prices are very irregular, although on the whole it is easier to find buyers than it has been for some time past. Steel Scrap is decidedly stronger, with sales at $22.50 to $23 for Heavy Melting Steel, and $23 to $23.50 for Rails. Bids and offers are about as follows for deliveries in buyers' yards: Choice Railroad Scrap, $23 to $25; No. 1 Yard Scrap, $19 to $20; No. 2 Light Scrap, $13 to $14; Machinery Cast, $17.50 to $18.50; Heavy Steel Scrap, $22 to $23; Old Iron Rails, $26 to $28; Old Steel Rails, $22.50 to $23.50; Wrought Turnings, $15.50 to $16; Cast Borings, $13.50 to $14; Old Car Wheels, $22 to $23; Iron Axles, $26 to $28; Steel Axles, $27 to $29.

The Pressed Steel Car Company of Pittsburgh have sent two sample steel cars of a special type to England, and, if they prove satisfactory, large orders will be placed for steel cars by the English roads.

Birmingham.

BIRMINGHAM, ALA., January 29, 1900.

There have been rumors and rumors of prices being cut on Iron, but no confirmation of them in the way of sales can be obtained. When traced to the original sources it is found that the authors are would-be buyers. It is a case where "the wish is father to the thought." It is singular, if these rumors were true, that what business is being done should go on a basis of quotations, while it is an absolute fact that a strong effort to place an order for 8000 tons at a concession of 25c. met positive refusal; and every seller had a chance at it. There has been an earnest and a persistent effort to break prices, and rumors have been freely used in the effort. So far as can be ascertained they have been signal failures. Quotations are therefore continued on a basis of $17.50 for No. 2 Foundry, with transactions fairly good, but none of magnitude. Just the slight concession of 25c. would obtain some round lot orders. So far it is declined. The position of the sellers is unchanged. But certain buyers have entered the market determined to force a concession if possible, and there you are. Each side has maintained its front, and the battle is still on. Medium size and small orders have come in sufficient quantities to absorb what Iron the sellers could spare, and in this respect they are easy and neither encouraging nor courting orders for round lots. Stocks continue to be well cleared up and shipments are lively. Only incomplete car loads are placed in furnace yards to grow to full car loads.

There has been a good deal of export inquiry which has led to a small business. The continuous application for prices from this source is evidence that they need the Iron. Applications for Steel continue to be frequent, but the mill has taken no new business of late. Since starting up the amount of metal melted each week has increased with time. But it is likely that some little time will yet elapse before everything is going to full capacity.

The Cement mill at Ensley City is now running about equal to capacity, and turning out in the neighborhood of 1500 barrels daily. Their product is marketed before it is produced, so great is the demand for it. As stated previously the Alabama Steel & Wire Company are calculating that a part of their plant will commence operations about February 1. The Mary Pratt Furnace, owned by the Alabama Consolidated Iron & Coal Company, will be put in "apple pie order" as soon as circumstances permit. This is the only furnace left in the district on which no effort has yet been made to bring it into line as a producer. Other furnaces mentioned heretofore are approaching readiness and by fall probably every furnace in the district will be in active operation. The new furnace of the Tennessee Company at Ensley will be in operation by March 1, barring accidents and unforeseen delays.

At no time in our history have we had such a run of men who represented large capital as we have had of late. Last week a party largely interested in the Sloss Furnace properties came down to inspect their holdings and returned. Now a similar party, largely interested in the Tennessee Company, is here to make an inspection of that property. Development of Coal and Mineral properties continues, but those directly interested cover their movements with all the secrecy possible and it is difficult to find out the exact status of trades. The evident intention of the L. & N. and the Southern Railroad to penetrate the Warrior Coal fields will lead to great results for that district.

The Alabama Coal Association has made a contract with one party at New Orleans for all the Coal they can deliver in 12 months. More, much more, could have been placed if delivery could have been made. Business in Coal seems to be in the same condition as Iron. It is simply limited by facilities of delivery. As spring approaches the prospects for all kinds of business seem to improve. Money is easy and plentiful, people have confidence, and the investments in realty are on the increase. No one is idle, save of his own volition.

New York.

Office of *The Iron Age*, 232-238 William street,
NEW YORK, January 31, 1900.

Pig Iron.—The local market has been quiet, but on the whole is still easy. In fact the New York market has for some time been more inclined to weakness than others, apparently because new furnaces are seeking an outlet here. Prices are as follows: Lehigh and Schuylkill Irons, No. 1 Foundry, $24 to $25; No. 2 X, $22.50 to $22.75; No. 2 Plain, $21.50 to $22, and Gray Forge, $18.50 to $19.25. Southern brands are quoted: No. 1 Foundry, $22.75 to $23; No. 2 Foundry, $21.50 to $22; No. 1 Soft, $22.25 to $22.75; No. 2 Soft, $21.25 to $21.75; No. 3 Foundry, $21.25 to $21.75, and Gray Forge, $19.25 to $20.25.

Cast Iron Pipe.— The 3000-ton order for Boston was secured by an Eastern shop, while the consolidated company took one order for 1500 in competitive territory. Some close figuring is being done. We continue to quote $29.50 to $30 for 8-inch Pipe, tidewater.

Steel Rails. — The Maryland Steel Company have secured an order for about 6000 tons for delivery in Norway. The domestic market continues very quiet at $35 to $36 for Standard Sections at Eastern mill. Angle Irons are 2.35c. to 2.50c, and Spikes, 2.65c. to 2.75c., delivered.

Finished Iron and Steel.— In Structural Material the market has been very quiet. Some bridge work has been placed and more, including foreign, is pending. Among the structural work which is soon coming into the market is that required for three large buildings at three corners of Nineteenth street and Fifth avenue, and one lot of about 3000 tons for a large New York estate. We quote: Beams, 2.40c. to 2.50c.; Angles, 2.40c. to 2.45c.; Universal Mill Plates, 2.65c. to 2.75c.; Tees, 2.40c. to 2.45c.; Channels, 2.40c. to 2.50c.; Steel Plates are 2.40c. to 2.60c. for Tank, 2.50c. to 2.75c. for Shell, 2.75c. to 2.90c. for Flange, 3.10c. to 3.30c. for Fire Box, 3.75c. to 4c. for Locomotive Fire Box, on dock. Charcoal Iron Plates are 3c. for C. H. No. 1, 3.50c. for Flange, and 4c. for Fire Box. Refined Bars are 2.20c. to 2.25c., and Common Bars are 2c. to 2.10c., on dock. Soft Steel Bars, 2.40c. to 2.45c.; Hoops, 2.70c. to 2.75c., base, delivered.

Merchant Pipe.—Quotations on Merchant Pipe in carloads are 50, 10 and 10 per cent. discount, delivered, and in less than carloads 50 and 10 per cent., f.o.b. maker's mill. On Casing the figures are: For carload lots, S. and S. Joint, 37½ per cent.; Inserted Joint, 32½ per cent.; for less than carload lots, S. and S. Joint, 32½ per cent., and for Inserted Joint, 27½ per cent., less 5 per cent. to jobbers, the prices for carload lots being delivered and for less than carload lots, f.o.b. mill. On Boiler Tubes, 1¾ to 2½ inch, the prices are 55 per cent. off on Steel and 50 per cent. on Iron; for Boiler Tubes, 2¾-inch and larger, 55 per cent. on Steel, and 52½ per cent. on Iron, all subject to 5 per cent. on car lots, the prices for carload lots being delivered and on less than carload lots f.o.b. mill.

The Lackawanna Iron & Steel Company of 52 Wall street, have just issued, in handsome form, their 1899 Section Book on Steel Rails and Splice Bars.

H. H. Jackson of 206 and 208 Franklin street announces that he has sold his store business in Iron and Steel to the firm of Hecht & Dohm, consisting of Herbert T. Hecht, for years superintendent of the Lebanon Iron Company of Lebanon, Pa., and Chas. H. Dohm, for 30 years with H. H. Jackson.

Metal Market.

Office of *The Iron Age*, 232-238 William street,
NEW YORK, January 31, 1900.

Pig Tin.—Throughout the last week the market has danced to the tune of London pipings, where one firm has been endeavoring to corner the market. Their operations received a forceful setback, however, to-day through the heavy shipments from the Straits, which amount to 3850 tons for the month of January. A year ago the shipments for the month of January amounted to 3595 tons. The shipments for this January seem especially large in view of the fact that statements were freely circulated yesterday to the effect that the arrivals would not total higher than 2500 tons. In comparison with the quotation of a week ago the market to-day is a little higher, but comparing with the prices of the week under review, to-day's price is low. Spot metal is being freely offered at 28c., while February delivery is offered at 27.75c., with no buyers above 26.75c.

London closed to-day £128 2s. 6d. for spot, and £125 for three months' futures. The European market is quoted easy. As an excuse for the high London price and the wide discount between spot and futures, it is said that enough steamers cannot be secured at London to transport the metal, and fear is also expressed that the British Government may intercept the steamers at the Suez Canal and press them into Government service.

Copper. —The condition of the market is well defined when it is stated that it is in a chaotic state. This condition was brought about by the spreading of a rumor to the effect that the Calumet & Hecla Company had opened their books for business at 16c. It was even stated that a large block had been sold at this price, but of this there is as yet no evidence, and well informed parties deny it. When interviewed regarding the matter by a representative of *The Iron Age*, Charles Raht, the company's New York selling agent, stated: "All I can say is that I sold to-day a large quantity of Copper to regular consumers at a figure considerably higher than 16c. I would say

that the market is unchanged and that the prices which ruled last week are right." When asked what these prices were he said: "16½c. for Lake, 16¼c. for Electrolytic, and 16⅛c. for Casting." Other parties in the trade who have means of ascertaining the truth of such reports as those referred to, deny them positively. One very large concern, however, quoted as the market price 16c. for Lake, 15¾c. for Electrolytic and 15⅝c. for Casting. The market is without doubt a little weaker. The price named by the New York Metal Exchange is 16¼c. for Lake and electrolytic and 16⅛c. for casting. In view of the present situation certain parties are of the opinion that a war is being entered into by the two large companies. London is firmer, closing to-day £71 7s. 6d. for spot and £70 7s. 6. for three months' futures. Best Selected is down 10 shillings and comes to-day £75 5s.

Pig Lead.—There is no change whatever, either as to the price or tone of the market. The American Smelting & Refining Company are quoting 4.70c. to 4.75c. for spot and futures. This is also the price generally accepted in the trade. The London market has advanced to £16 10s. for Soft Spanish.

Spelter.—This market is quiet but firm with 4.75c. to 4.80c. as values ruling. London is quoted £22 12s. 6d., which is an advance of 10 shillings over last week. A large export business is reported. It is also stated in this connection that better prices can be obtained abroad than in this country.

Antimony— Is without change, with Hallett's selling at 9¾c. and Cookson's 10½c. to 11c.

Nickel— Continues in its firm scarcity. The demand is good and prices for wholesale lots remain unchanged at 38c. Retail lots are quoted as high as 45c.

Quicksilver.—Wholesale lots of 100 flasks and over are quoted $51 per flask of 76½ lbs. The London market remains unchanged at £9 12s. 6d. for Rothschild's, and £9 11s. 3d. for second hand.

Tin Plate.— There is an unprecedented demand coming from all quarters. Tin can manufacturers continue to buy heavily, and during the last few days a heavy business has been done in Roofing Plates.. The demand for the latter comes principally from the South. Prices are unchanged, the American Tin Plate Company quoting on a basis of $4.84 per box of standard 100-lb. Cokes, f.o.b. New York, or $4.65, f.o.b. mills.

Jones & Laughlins, Limited, of Pittsburgh have made another purchase of about 12½ acres of ground adjoining their present works on the South Side, Pittsburgh. This concern now own a great deal of vacant property alongside their plant, which will be used for extensions, the exact nature of which have not as yet been determined.

The erection has been commenced of a new blooming mill and 14 basic open hearth steel furnaces at the Duquesne Steel Works of the Carnegie Steel Company, Limited, Duquesne, Pa. The immense amount of brick work connected with the erection of this open hearth plant and blooming mill made it necessary for the Carnegie Steel Company to import a large number of bricklayers from Eastern cities last week. Bricklayers are extremely scarce and can hardly be had in the Pittsburgh district.

The Belfont Iron Works Company, Ironton, Ohio, and Republic Iron & Steel Company, operating the Eagle Mill at the same place, have contracted with the Triple-State Natural Gas Company for a supply of natural gas for use under the boilers at both plants.

The iron firm of Orr, Griffith & Co., Evansville, Ind., have changed their title to the Orr Iron Company, B. G. Griffith retiring, and Samuel Orr, a son of the head of the firm, assuming his interests.

The plan to build a large steel plant at Lockport, N. Y., to manufacture structural shapes, under patents granted to E. M. Butz and others of Pittsburgh, has been abandoned.

The labor organizations of Sharon, Sharpsville and Wheatland, in the Shenango Valley, have consolidated under the name of the United Labor League. Louis Hughes and W. E. Hughes, both of Sharon, are president and secretary, respectively.

The Chicago Tool Company have secured a tract of 5 acres at Winthrop Harbor, near Waukegan, Ill., for the purpose of building a plant to engage in the manufacture of heavy machine tools. John M. Sweeney, well known in the Western machinery trade, is manager of the new company.

The Statement of the American Steel & Wire Company.

At a meeting of the directors of the American Steel & Wire Company at Chicago a statement of the balance sheet as of December 31 was issued. By way of comparison we print also the figures for June 30, which were submitted some time since to the New York Stock Exchange:

Assets.

	December 31.	June 30.
Real estate, buildings, plants and machinery.	$79,629,512	$75,446,633
Investments	4,064,475	5,348,242
Bills and accounts receivable	8,247,220	7,482,470
Cash	3,225,293	1,435,902
Inventories	10,995,446	7,648,445
Totals	$106,161,947	$97,355,694

Liabilities.

Preferred stock	$40,000,000	$40,000,000
Common stock	50,000,000	50,000,000
Bonds and mortgages	.....	130,656
Accounts payable (since paid)	4,899,418	3,032,990
Depreciation, bad debts and discounts	1,200,000	.....
Profit	13,362,529	4,892,048
Less—		
Depreciation	1,000,000	.....
Reserve fund	200,000	59,765
Dividends on preferred	2,100,000	700,000
Net profit	12,162,529	4,132,283
Totals	$106,161,947	$97,355,694

The company were not incorporated until January 14, 1899, but as the properties were taken over as going concerns as of January 1, 1899, the profits for the entire calendar year are included above.

Jones, Cæsar & Co. of New York, public accountants, and C. A. Honecker, auditor of the American Steel & Wire Company, certify to the accuracy of the balance sheet.

The United Metal Selling Company.

With a capital of $5,000,000 the United Metal Selling Company were organized under the laws of New Jersey. We are informed that the firm of Lewisohn Brothers will be merged into this company and that it is virtually a selling company, to be operated in connection with the Amalgamated Copper Company. We are officially informed that the new company will occupy a floor in the Bowling Green Building, 11 Broadway. The directors of the company are:

William Rockefeller.
Henry H. Rogers.
Leonard Lewisohn.
Adolph Lewisohn.
Charles C. Beaman.

Of these gentlemen the first two named are known to be heavily interested in the Amalgamated Copper Company, Leonard and Adolph Lewisohn are of the firm of Lewisohn Brothers, and Mr. Beaman is a member of the law firm of Evarts, Choate & Beaman.

The Springfield Machine Tool Company, Springfield, Ohio, at their February 1, 1900, opening exhibit their representative machine tools to be displayed at the Paris Exposition, and the new plant of the company, now being equipped with modern tools and appliances. The new plant is in such shape that a fine arrangement is affirmed, and the belief is expressed that the new plant is equal to any in the country in detail equipment.

The Federal Cement Company, organizing under the West Virginia laws with $5,000,000 capital, will open up large new tracts of Portland cement. A large acreage in Virginia and Tennessee, part of some 25,000 acres secured, is said to show unusually fine deposits, and the company will commence active operations, installing a number of plants at once. Inquiries in reference to supplying machinery, appliances, &c., should be addressed to E. Caldwell, 35 Broad street, New York.

The Pressed Steel Car Company of Pittsburgh will send a number of skilled men to Egypt in February to put together the steel cars recently sold to the British Government. The trucks for the cars have already been shipped and the completed parts will be sent in a few days.

The French Cabinet has approved and submitted to the Legislature the bill of the Minister of the Navy asking for an appropriation of $95,000,000 for the fleet and $28,000,000 for coast defence. The French naval programme includes the construction of six first-class battle ships, five armored cruisers, 29 torpedo boat destroyers, 112 torpedo boats and 26 submarine boats.

QUOTATIONS OF IRON STOCKS DURING THE WEEK ENDING JANUARY 31, 1900.

Cap'l Issued.		Sales.	Thursday.	Friday.	Saturday.	Monday.	Tuesday.	Wednesday
$29,000,000	Am. Car & Foundry, Common..	1,310	-12¾	.....	.....	.....	.....	13 -13¾
29,000,000	Am. Car & F'y, Pref.(7% Non-Cu.)	1,102	-60	.....	.....	-59	-59	60 -60¼
19,000,000	Am. Steel Hoop, Common.....	7,005	-42	.....	.....	.....	42½-43⅛	44 -45⅛
14,000,000	Am. Steel Hoop, Pref. (7 % Cu.).	2,940	81 -81⅜	-81	.....	-81	81 -81¼	81¼-82
50,000,000	Am. S. & W., Common.....	228,570	49 -50	48⅝-49	48¾-49¼	49 -50⅛	51⅛ 55⅛	55¾-58⅜
40,000,000	Am. S. & W., Pref. (7 % Cu.)....	10,242	90¼-90¾	90¼-90⅞	-90	90⅞-91	91⅛-92	92 -92¾
28,000,000	Am. Tin Plate, Common, N. Y..	5,050	-29	-28⅜	.....	27⅜-28⅛	-30	30⅝-32
18,000,000	Am. Tin Plate, Pref., N.Y.(7% Cu.)	1,072	-81½	.....	-81½	-81¾	....	-82
7,500,000	Bethlehem Iron†	200	-58	.....	.....	-58	.....	-58
15,000,000	Beth. Steel, Par $50, $1 paid in.	231	.....	.....	.....	.....	17⅝-18	.....
7,974,550	Cambria Iron, Phila*	55	-45	.....	-45	.....	.....	.....
16,000,000	Cambria Steel**	5,877	21⅞-22	21⅝-21¾	-21⅛	21⅝-21¼	21¼-21⅞	21⅝-21½‡
11,000,000	Col. Fuel and Iron	12,765	-43	41¾-42¼	-42	41⅛-42⅜	42 -43⅛	43 -44
46,484,300	Federal Steel, Common	61,515	51⅛-52	50⅝-51	50⅝-51⅝	50⅜-51⅛	51⅛-53¾	53⅛-54⅛
53,253,500	Federal Steel, Pref. (6 % Non-Cu.)	6,860	73⅛-74	73 -73¼	.....	.....	73⅛-74⅛	74⅛-74¾
32,000,000	National Steel, Common, N. Y..	9,690	41 -41⅜	-40	-40¼	40⅛-40⅜	41 -43⅜	44 -45
27,000,000	Nat'l Steel, Pref., N. Y. (7 % Cu.)	2,180	-93	92¼-92⅛	.....	-93¼	92⅛-94	93⅛-94
5,000,000	Penna., Common, Phila.....	100	78 -79⅛	.....	.....	.....	....	-78
1,500,000	Penna., Pref., Phila.....	.....	.....	.....	.....	.....	.....	-90⅛
12,500,000	Pressed Steel, Common.....	790	-56⅛	55⅝-56	.....	-56	.....	.....
12,500,000	Pressed Steel, Pref. (7 % Non-Cu.)	592	-87¾	....	.....	-87	.....	-87⅛
27,352,000	Republic Iron & Steel, Common.	21,235	20¾-21⅛	20¼-20¾	20⅛-20⅝	20⅛-21⅜	21⅛-22⅞	22⅛-24⅛
20,852,000	Repub. Iron & Steel, Pref. (7% Cu.)	1,702	.....	-66	.....	-66	66 -67	67 -67½
20,000,000	Tennessee Coal and Iron.....	12,675	85 -85¾	82 -84	83 -83½	82 -83½	84½-87	86½-87⅝
1,500,000	Warwick Iron & Steel (par $10)	437	10½-10⅝	.....	-10¼	- 9¾	.....	9⅞-10‡

* Par $50. ** $1.50 per share paid in. † 6 % guaranteed by Beth. Steel Co. Late Philadelphia sales by telegraph. ‡ Ex-dividend.

Bonded indebtedness: Am. S. & W., $130,656; Am. Tin Plate, none; Am. Steel Hoop, none; Cambria Iron Co., $2,000,000 6 % debenture 20-year bonds, 1917, payable option 5 years, assumed by Cambria Steel Co.; Federal Steel Co., $13,200,000 Illinois 5 %, $7,417,000 R. J. R. R. R. 5 %, $1,600,000 Johnson 6 %, $6,732,000 D. & I. R. R. R. 5 %, $1,000,000 2d D. & I. R. R. R. 6 %, $10,000 land grant D. & I. R. R. R. 5 %; National Steel, $2,561,000 6 %; Tennessee C., I. & R. R. Co., $8,367,000 6 %, $1,114,000 7 %, $1,000,000 7 % cu. pref.; Pennsylvania Steel, $1,000,000 5 % Steelton 1st 1917, $2,000,000 5 % Sparrow's Point 1st 1922, $4,000,000 consolidated, both plants; Bethlehem Iron, $1,351,000 5% maturing 1907. Interest and principal guaranteed by Bethlehem Steel Co. Republic Iron & Steel, none; Warwick Iron & Steel, none. Colorado Fuel & Iron Co.: Col. Fuel Co. Gen. Mort. 6 % $880,000, Col. Coal & Iron Con. Mort. 6 % $2,810,000, Col. Fuel & Iron Gen. Mort. 5 % $2,303,000. Also outstanding $2,000,000 preferred stock with accumulated dividends of $640,000 to June 30, 1899.

Iron and Industrial Stocks.

The sensation of the week has been the statement made by the American Steel & Wire Company relative to their business during the first year of their career, a statement which has been verified by public accountants. It is understood that the inventory was made up in a conservative manner, raw materials and finished products going in far below the market prices. The showing made is certainly extraordinary, particularly when the fact is taken into consideration that the greater part of the profits were made during the second half of the year. Nor is the Wire statement likely to remain as an isolated instance of handsome returns. It is understood that the Moore group, the National Steel Company, the American Steel Hoop and the American Tin Plate, are earning very heavily. All of them, and the Tin Plate in particular, were engaged during the earlier part of their first fiscal year in carrying out a legacy of old contracts at very low prices, so that their full earning capacity did not develop until well into the fall. A close estimate makes the earnings of the American Steel Hoop Company $3,087,000 for the first eight months, to January 1, to which the last four months of the fiscal year will add heavily.

	Bid.	Asked.
American Bicycle Company, Common	18	19
American Bicycle Company, Preferred	48	51
American Bicycle Company, Bonds	..	92½
E. W. Bliss, Common	132	150
E. W. Bliss, Preferred	125	..
Cramp's Shipyard Stock	80	84
Diamond State Steel	5⅛	5⅞
International Silver, Common	10⅝	10¾
International Pump, Common	16	17
International Pump, Preferred	62½	63½
National Tube, Common	44½	45
National Tube, Preferred	92	94
Otis Elevator, Common	22	25
Otis Elevator, Preferred	86	89
Pratt & Whitney, Common	3½	5
Pratt & Whitney, Preferred	46	54
U. S. Projectile	95	105
Sloss & Sheffield Steel & Iron, Common	29	30
Sloss & Sheffield Steel & Iron, Preferred	68½	70
Tidewater Steel	15	15⅛
U. S. Cast Iron Pipe Company, Common	7	8
U. S. Cast Iron Pipe Company, Preferred	40	42
H. R. Worthington, Preferred	98	99

The Standard Pneumatic Tool Company, Chicago, have increased their capital stock to $1,000,000. It was previously $50,000.

The United States Cast Iron Pipe & Foundry Company have declared a dividend of 1¾ per cent. on the preferred stock, payable March 1. Books close February 9 and reopen March 2.

We present elsewhere the statement of the American Steel & Wire Company for the year 1899, which shows a net profit of $12,162,523, after setting aside $1,000,000 for depreciation and $200,000 as reserve. Out of this dividends for the whole year, on preferred stock, amounting to $2,100,000 have been paid, leaving a balance of $10,062,530. Out of these profits for 1899 the directors have voted to pay 7 per cent. on the common stock, payable in four payments, on April 2, July 2, October 2, 1900, and January 2, 1901. On February 10 a meeting of the directors is to be held at Chicago to consider the question of retiring $5,000,000 of preferred stock.

The Andover Iron Company of Phillipsburg, N. J., have declared a dividend of $2 per share, payable March 1 to shareholders of record March 1.

The Thomas Iron Company of Hokendauqua, Pa., have declared the regular semi-annual dividend of 4 per cent., and also an extra dividend of 4 per cent. out of the earnings of the last six months of 1899.

The Colorado Fuel & Iron statement for the six months ending December 31 shows net earnings of $1,025,100. The fixed charges for the 12 months ending June 30, 1900, including bond interest, taxes and preferred stock dividend, are $600,000, leaving a surplus of $425,100.

The directors of the International Silver Company have declared a dividend of 1¾ per cent. on the preferred stock, payable April 1.

A soft coal scarcity, approaching the dimensions of a famine, exists in New England. The scarcity is keenly felt in the mill towns, where the conditions are aggravated by reason of the drought, necessitating recourse to steam in place of water power. The trouble is attributed to the fact that for the past six months the railroads have found the great volume of general traffic more profitable than coal carrying.

The Ohio Supreme Court handed down a decision this week in which the State Anti-Trust law is held to be valid. The decision was rendered in a case against the Buckeye Pipe Line Company, alleged to be a part of the Standard Oil combine. The defense was the alleged unconstitutionality of the law.

Herman Glay, one of the members of the Metal Workers' Union engaged in the recent strike at the Winslow Brothers' works in Chicago, was this week sentenced to 60 days' imprisonment in the Cook County Jail for violation of an injunction by Judge Holdom, restraining the strikers from interfering with the non-union workers.

At the annual meeting of the directors of the Falcon Iron & Nail Company, Niles, Ohio, the following officers were chosen: Myron I. Arms, president and treasurer; E. C. Brainard, vice-president; W. H. Foster, secretary.

Charleston, S. C., is arranging for an industrial exposition in 1901.

The official trade returns for the Dominion of Canada for the six months ended December 31, 1899, show an

expansion all along the line, with increases far beyond anything in the history of Canadian trade. The total receipts for the half year amounted to $93,697,860, as compared with $78,961,335 for the corresponding period of the previous fiscal year. The exports increased in value from $98,902,983 in 1897-1898, to $109,793,755, and the aggregate trade increased from $177,864,318 in the six months ended December 31, 1898, to $203,491,615 in the last half of 1899.

The New York Machinery Market.

Office of *The Iron Age*, 232-238 William street,
NEW YORK, January 31, 1900.

Since our last writing the general conditions of the market have continued uninterrupted by changes of any sort. Business has kept up in good volume, and a feeling of buoyancy maintains the firm tone. Prices remain unchanged as far as the principal manufacturers are concerned.

Among the most important purchasers of the week were the General Electric Company, who bought upward of $35,000 worth of lathes, drills and planers.

It is also stated that the Allgemeine Electricitats Gesellschaft of Berlin, who are the German General Electric Company, are in this market for large quantities of machine tools.

An interesting shipment is being arranged by Schuchardt & Schutte, inasmuch as it involves about the largest type of machine tool ever built in this country. It is a 16 x 25 foot extra heavy pattern vertical boring mill. The machine weighs 125 tons. The mill was built at the Bement-Miles shops of the Niles-Bement-Pond Company. It will be shipped to Germany, where it will be utilized on Government work.

The last of the machine tools ordered by the Aultman & Taylor Machine Company, builders of Cahall boilers, have just been erected at their enlarged shops. Besides the addition of a large quantity of new tools the entire machine system of the shops have been so rearranged as to double the capacity of the works.

The equipment of machine tools which has recently been ordered by the Marine Engine Company of Harrison, N. J., is now being installed. While this equipment includes many good tools the indications are that it will soon be supplemented by a much larger lot of heavy machinery. At present this company are building the Alco Vapor launch. It is their intention, however, to enter the heavy marine engine market. The present equipment was installed only with a view of taking care of the small work. Miller F. Moore, who is the president of the company, was well known in the trade as a member of the firm of Samuel L. Moore & Sons Company, who rented their Elizabethport, N. J., plant to Thomas Nixon, who is at present operating it under the name of the Crescent Shipyard. Mr. Moore's intention is to build only the engines for large ships. The building of launches and yachts will, of course, also be continued. The main building of the Harrison plant is 200 x 100 feet, of modern steel frame construction, with 30-foot galleries on each side. The structure was built by the Berlin Iron Bridge Company of East Berlin, Conn. The engines were ordered from the Harrisburg Foundry & Machine Company of Harrisburg, Pa., and the boilers were furnished by the Newburgh Steam Boiler Works of Newburgh, N. Y. The Buffalo Forge Company of Buffalo, N. Y., installed the heating and ventilating apparatus. The machine tools were purchased principally from Manning, Maxwell & Moore, Beaman & Smith of Providence, R. I., the Acme Machine Company of Cleveland, Ohio, the American Wood Working Machine Company of New York and the Ship Windlass Company of Providence, R. I. The company are shipping at present a 30-foot vapor launch to Lawrence Jones of Louisville, Ky.

Another automobile company, who will soon be in the market for a machine shop equipment, have recently secured a factory site at Newark, N. J. The style of the company is the Messerer Automobile Company. Their offices are located at 792 Broad street, Newark, N. J. The factory will be located at the foot of Centre street, Newark, N. J. The company will build light vehicles.

Orders are being placed for power generating machinery by the National Conduit Company, whose New York offices are in the Times Building, 41 Nassau street. We are informed that they are arranging for an extensive addition to their plant, which is located at Hastings, N. Y. They placed an order with the Babcock & Wilcox Company for 1800 horse-power of water tube boilers.

Large purchases of mining machinery and equipment for smelting and refining works are being placed by the Almagamated Copper Company. The purchases are being made direct by Jesse Lewisohn of Lewisohn Brothers, 80 Fulton street, New York. The machinery is to be used in improving the properties of the Amalgamated Copper Company. J. Parke Channing of Butte, Montana, is the engineer for the company. He is also located at 81 Fulton street.

An order for 12 large electric motors was received by the Northern Engineering Company of 39 and 41 Cortlandt street, from London.

The factory of the New York Blower Company has been removed from Louisville to Bucyrus, Ohio. The new shop has been equipped with many new machines and tools.

Orders are being placed by C. Bahnsen of 462 Broome street, New York, for a woolen dress goods mill equipment. The mill will be built at Passaic, N. J., by Ernst F. Weissflog, who is a large mill operator in Germany. The plants will be known as the Gera Mills.

P. H. & F. M. Roots of 109 Liberty street and Connersville, Ind., have booked an order for three rotary pressure pumps with a capacity of 40,000 gallons per minute each. The pumps will be furnished to the Illinois Steel Company, who have at present four of the pumps in use. This company also received an order for several similar pumps and blowers to be installed in smelting works of the Amalgamated Copper Company, located at Butte, Mont., and in Tennessee.

The Great Northern Railway Company purchased from the Webster Mfg. Company of 38 Dey street and Chicago, the machinery for equipping a 6,000,000 grain elevator, which will be erected at West Superior, Wis.

The Chicago and Northwest Machinery Market.

Office of *The Iron Age*, 805 Fisher Building,
CHICAGO, January 29, 1899.

As the old year drew near its close some apprehension was felt that a period of dullness in the machinery trade was at hand. Quite a number of manufacturers and dealers observed a falling off in inquiries as well as sales during the latter part of December. This led them to believe that January would prove to be a dull month. It is interesting to note that in this expectation they have been agreeably disappointed. The first month of the new year has proved in practically every respect worthy to rank in sustained activity with the last few months of 1899. Reports from builders of all kinds of machinery are exceedingly cheerful, and in not a few instances the present year is confidently expected to show even better results than its predecessor. Sales are being made of heavy machinery for mining and manufacturing purposes to large interests whose facilities for production will be crowded to the utmost as far in the future as it is at present possible to see. Many new enterprises are being started which will require much machinery for their equipment. Manufacturers of power transmission appliances are even busier than they have been. The great manufacturers of agricultural implements have been buyers of machine tools steadily during the last few months and are still coming into the market. Their business has been constantly expanding and increased facilities have been continually required. The better deliveries which are now being made of castings of all kinds and of finished iron and steel are contributing considerable to the betterment of the machinery trade. Some time since annoying delays were caused by difficulty in securing malleable and steel castings and even ordinary gray iron castings. All kinds of foundries were so crowded with work that it seemed impossible for consumers of such products to be able to get their requirements filled satisfactorily. The foundrymen of the West have so greatly increased their productive capacity that little complaint is now heard on this score. Iron and steel forgings are also in somewhat better supply, but they are not yet to be had quite as easily as the machinery trade would like.

Some uneasiness is felt relative to the labor situation. Increased strikes of molders and core makers have disturbed the foundry trade and perhaps the end of such

difficulties is not yet at hand. Another trouble now threatening is the possibility of a disagreement between the Western coal operators and their miners, which may result in the closing of coal mines and bring about serious shortage of fuel. Complaint is also heard of the diminished efficiency of workmen employed in machine shops and foundries, who are stated to be less disposed to work as steadily as when wages were lower and the demand for workmen was not so great. This is reducing the output of some establishments considerably as compared with the results obtained per man two or three years since.

The Edward P. Allis Company, Milwaukee, Wis., have found inquiries in all departments fully as heavy if not even better than in the closing months of '99. Business is all that they could ask. Extensions to their present large works are being built, which will increase their facilities very materially. The number of men on their pay roll is about 2500 at the present time, with enough work on hand to keep them extremely busy for some months to come.

The Gates Iron Works, Chicago, say that their business in January maintained its strength in volume. The special features of their trade were some large contracts for mining machinery plants. They have also closed some fine contracts for iron ore crushing plants in Northern Michigan and Alabama. They do not see the slightest evidence of any letting up of the pressure in their lines of manufacture.

The H. W. Caldwell & Son Company, Chicago, find some of the usual let up of business during the month of January, but trade for the past month was more active than during preceding years. They are now occupying their extensive new plant at Seventeenth street and Western avenue.

The Gardner Governor Company, Quincy, Ill., report that their trade for 1900 opened with a rush. They are crowded in all departments far beyond anything ever experienced in the initial month of the year. If it continues in the same proportion throughout the year 1900 will be by far the largest ever known to them.

Henry E. Pridmore, manufacturer of molding machines, Chicago, says that during the past month certain classes of foundrymen, who heretofore failed to recognize the fact that molding machines were an absolutely essential factor in their foundries, not only for the production of better castings but also for the production of cheaper ones, have begun to realize that the success of this much talked of and much complained about machine is inevitable. Among some of these self converted minds he mentions the manufacturers of such work as soil pipe, soil pipe fittings, stoves, radiators, ornamental iron pieces and sewing machine parts. He has received inquiries from the manufacturers of all of these classes of work, all of whom are anxious to install the machines as soon as he has time to fill their orders. Canadian inquiries and orders are also increasing, among his most recent customers being the Frost & Wood Company, the Algoma Iron Works, the Canada Switch & Spring Company and the Noxon Company, Limited. European trade continues to be very good, and it is only by using the most strenuous efforts that he is able to give home orders the attention they require and yet ship foreign orders in anywhere near the time specified. Among the largest foundries in England which he has recently equipped are those of Harrison, McGregor & Co. of Leigh, Lancashire, and Bamford & Sons of Uttoxeter, Staffordshire. He is also shipping a number of machines to Belgium, Germany, Sweden, Holland, Scotland and Italy.

Perry Ransom, Oshkosh, Wis., made contracts in January with Adolph Janssens of Paris and with Gustav Diechmann & Sohn of Berlin, who are putting in a stock of disk grinders and taking the exclusive agency for Germany and France. The Vulcan disk grinders are taking well and a fairly good business is expected in them the coming year. The demand for the regular disk grinders is very brisk, but deliveries are being made more promptly, as castings are more easily obtained than in the last few months of last year.

Bertsch & Co., manufacturers of shears, punches and bending rolls, Cambridge City, Ind., found the volume of business very satisfactory last month, especially as it was the month of January. They are now running night and day with two sets of hands to get orders out promptly. They recently shipped one of their improved hydraulic shears, weighing 50 tons, for cutting 1¼-inch plates.

The American Steam Pump Company, Battle Creek, Mich., found business in January considerably better than the corresponding month last year. They have business in hand to run their factory at least four months. They expect to double their machine shop facilities the present year and to build a new power plant.

The Charter Gas Engine Company, Sterling, Ill., report that the opening of the year has been very auspicious. Carload orders unfilled are somewhat of a rarity at this time of the year, and other orders have been very satisfactory. They anticipate the necessity for quite an extension of their facilities and are preparing themselves to meet it. Engines have been shipped the past month from Delaware to Texas and covering a great deal of the intermediate territory.

The Stover Mfg. Company, Freeport, Ill., are experiencing a little let up in the volume of business since the first of the year, which is giving them a chance to catch up on back orders. The very mild weather had a tendency to reduce the demand for grinding mills and machinery of this class. The high prices that they are now obliged to charge no doubt have had something to do with the falling off of business, and considerable apprehension is expressed by their agents that the volume of business will not be as large in certain lines during 1900 as it was the past year.

The Chicago Pneumatic Tool Company, Chicago, say that their trade has shown a steady increase from month to month and January, 1900, shows an increase over any previous month. They are arranging to transfer their Boyer shops from St. Louis to Detroit, Mich., where they will have greatly increased facilities, and when in running order they expect to be able to show really the model machine shop of the world. They are also arranging to consolidate their other factories, with greatly increased facilities, so as to be able to take care of the business constanlty coming to them. They have recently received large orders from Japan, Mexico and other foreign countries, while their trade throughout the United States shows an increase in every quarter.

The Adams Company, Dubuque, Iowa, say that their sales of the Farwell molding machines are running beyond their expectations. A list of the foundries now using these machines covers no less than 25 States, in which every section of the country is well represented. The extent to which they have been adopted as an important part of foundry equipment is shown by the fact that in one establishment no less than 137 of these machines are used, while a number of others have over 100 each. They are being used for a great variety of work. The list further shows that they have been adopted in foundries in Canada, England, Italy and Russia. About 2000 of these machines are now in operation in the United States. All were placed during 1898 and 1899 and all but 68 within the last 18 months. The rapidity with which manufacturers of light castings particularly are equipping their foundries with molding machines indicates the necessity which will soon confront all such foundrymen of providing themselves with similar labor saving appliances.

The Hoefer Mfg. Company, formerly Stover Novelty Works, Freeport, Ill., say their business continues to increase. They made a shipment of a carload of machinery to Europe last week.

The Industrial Iron Works, Bay City, Mich., state that business opened with them this year with every indication of a continuance of all that they were favored with during 1899. Their plant has been running night and day for two years past, yet orders have been gaining on them constantly and they can see no let up. Among business recently booked are a large order for cranes from the Baltimore & Ohio Railroad, similar orders from the Delaware & Hudson and the Erie roads and locomotive steam cranes for Laughlin & Co., Limited, Pittsburgh; Warren Foundry & Machine Company, Phillipsburg, N. J., and the American Steel & Wire Company, Worcester, Mass.

With the Witte Iron Works Company, Kansas City, Mo., business has been very good during January and they see no relaxation of it. Shipments of gas engines have been large and they have ample orders ahead. The manufacturer of a meritorious article or machine is now getting the benefit of his years of effort. They have only one fear, and that is that the extreme cost of raw material and the delay of getting it may hold the placing of orders in the future.

The Fox Machine Company, Grand Rapids, Mich., have closed up extensive contracts and believe that the spring trade is going to be the best that it has had for a number of years. They are being crowded in their different departments and are contemplating selling off one or two lines to make room for the growing demand for the balance of it.

The Armstrong Bros. Tool Company, Chicago, say the new year opened with a rush. January, 1900, makes a new sales record for Armstrong tool holders. The most striking feature of the month's business was the large stock orders received from dealers located in widely separated parts of this country as well as Canada and Europe. This is the best evidence of the existence of widespread confidence in 1900 trade on the part of the jobbers. Among recent notable orders for tool holders since January 1 are one from Brussels, Belgium, amounting to $1200 and one from New York City amounting to $800.

The Morton Mfg. Company, Muskegon Heights, Mich., have received considerable inquiry for machines from the West and Northwest and look forward to a prosperous year's business.

The Nordberg Mfg. Company, Milwaukee, Mich., say that so far as they can see there is no falling off in in quiries or orders for machinery since the new year opened. All of the large concerns throughout the United States are continuing their policy of expansion, and even the mining companies of South Africa are busy in planning for very much enlarged machinery calculated to meet the great development that is anticipated immediately after the close of the war.

The Union Steam Pump Company, Battle Creek, Mich., say that mail orders continue to keep their books full. Trade so far for 1900 is three times that of last year for the corresponding month. They continue to add floor space and new machinery. Their customers accept the advance in prices in good spirit and bills are paid promptly. Their impressions are favorable for a larger business in 1900 than in 1899.

The Vilter Mfg. Company, Milwaukee, Wis., say that January was a month of good business in the line of refrigerating machinery and Corliss engines, and particularly so in the latter. One contract for Corliss engines called for four for a large plant in Texas. They have lately installed some new tools to facilitate work on some of their specialties. They are still operating their works day and night, and the contracts they have in hand will necessitate continuing to do so for months to come.

The M. C. Bullock Mfg. Company, Chicago, state that business continues brisk. They have closed an order for the second hoist for the Spruce Mining Company and another for a Willans engine for the Massachusetts State Farm, and have sent a diamond drill and outfit to the Northwest. There seems to be no falling off in the demand, although high prices continue.

The Gisholt Machine Company, Madison, Wis., say that their business for January was very satisfactory, being about up to the average for last year.

The Whiting Foundry Equipment Company, Harvey, Ill., state that although anticipating small orders during the last few weeks they have been fortunate in securing a large volume, so that they have plenty of work well in hand for some time to come.

January started in unusually well with the Otto Gas Engine Works of Chicago. The open winter is largely accountable for this. They have been working every available man every day, mostly on railroad work, construction work, &c. General sales are coming much easier and from all points of the compass.

Owing to continued warm weather orders for refrigerating machinery are coming in very rapidly to the Fred W. Wolf Company of Chicago. The Southern concerns using ice and refrigerating machinery are now rushing in their orders. The great increase in the price of materials this year seems to have had a tendency to retard the business in this line of machinery to some extent, but if the warm weather keeps up they will undoubtedly have a continuation of the immense business which was enjoyed last year. Among contracts recently closed are the following: A. Coors, Golden, Colo., one 50-ton refrigerating plant, 50-ton ice machine and 11-ton refrigerating machine and plant; the Avon Mills, Gastonia, N. C., 25-ton refrigerating machine and ice making plant; Live Oak Mfg. Company, Florida, 18-ton refrigerating and ice machine; Diebolt Brewing Company, Cleveland, Ohio, 70-ton refrigerating machine and direct expansion piping; Los Angeles Brewing Company, Los Angeles, Cal., 50 ton refrigerating machine; Sulphur Ice, Light & Water Company, Sulphur, I. T., 6-ton ice plant; Asylum for Chronic Insane, Hastings, Neb., 6 ton refrigerating plant; Sioux City Brewing Company, Sioux City, Iowa, 50-ton refrigerating plant; New Knoxville Brewing Company, New Knoxville, Tenn., 25-ton ice plant. They have received numerous piping and condenser orders.

Rudolphi & Krummel, Chicago, report their trade opening up with every indication for a prosperous year. Sales for the month of January were very satisfactory, showing no falling off as compared with December. Orders and inquiries are mostly from sheet metal workers and tinware manufacturers and cover a much wider range of territory than usual.

The W. A. Jones Foundry & Machine Company, Chicago, manufacturers of pulleys, shafting, &c., report their orders coming in as freely as at any previous time. They are running their establishment just as much overtime as they can get the men to work. From inquiries coming in they see no prospect of any change in the active condition of trade. They find a large number of new enterprises starting which need power transmission appliances and are also obtaining much work in furnishing equipment to old concerns. They have just closed for their foundry department a number of contracts for castings running through the year. The company are pushing work on their new plant in the northern part of the city and expect to have it in operation in a week or two. The new plant will consist of a foundry and a large machine shop. They will add to their product the manufacture of a pulley lathe of new design and will also make for the trade a new pulley molding machine. They have just finished one of these molding machines for their own use, which makes the eighth now in their plant.

The Marshall & Huschart Machinery Company, Chicago, report their January trade in machine tools much better than had been expected. The falling demand in December was followed by an improvement which set in early in January. A number of excellent orders for machinery were placed among the Chicago trade during the month, of which they secured a good share.

J. B. Doan & Co., Chicago, believe the demand for machine tools this year will be better than in 1899. Inquiries are coming in from new concerns as well as from old establishments. The builders of tools are still far back in deliveries and from present appearances will not catch up for some time.

McDowell, Stocker & Co., Chicago, report their business for the past month fully up to the average of previous months. They observe that manufacturers who advanced prices considerably are losing some of their foreign trade, and consequently are able to supply machines more quickly than other builders who kept their foreign outlet by holding prices down. They regard the outlook for this year very encouraging.

Hill, Clarke & Co., Chicago, saw no falling off in their January trade. While heavy planers continue scarce and manufacturers are far in arrears on deliveries other tools are more plentiful and the trade can now be more easily supplied. Nothing of a discouraging character, however, is seen in the situation.

Chas. H. Besly & Co., Chicago, report a continuance of the heavy demand for tools and machinists' supplies of all kinds. The volume of business is fully as large as that of last year. The decline in the price of some metals is believed to have favorably influenced trade in this line. They find a particularly heavy demand for their Helmet oil for lubricating and also report good sales of their Gardner grinders. Their factory is still crowded with work. They have enjoyed quite a steady export trade and are at present making notable shipments to India. Some slowness has been observed in collections, which is believed to be due to the increased capital now required to conduct business.

The Pearson Machine Company, Chicago, who formerly did a large business in supplyng machinery to bicycle manufacturers, have had but a small trade from that branch of industry for some months. They have been fortunate in finding other customers and continue to keep their establishment running on full time. They are doing an export trade of some magnitude, which maintains itself quite steadily.

The Maywood Foundry & Machine Company, Maywood, Ill., have entered the field with a new molding machine named the Weiss machine. It is of the portable type. The company are also designers and builders of other labor saving machinery.

Improvements at the Plant of the Pusey & Jones Company.

To meet the demands of increasing business the Pusey & Jones Company of Wilmington, Del., have made, and are still engaged in making, additions to and improvements in their large plant, some of which are as follows:

A new steel frame building with a floor space of 115 x 40 feet, to be used as a pattern shop, to take the place of the old quarters, which are now inadequate to the business. In the lower part of this building, under the pattern shop, the space is used in connection with the ship yard, for fitting up the frames of vessels and for kindred work. The office building has been enlarged and improved. The area of the drafting room has been increased 50 per cent., and the working facilities, comfort and appearance have been improved correspondingly. There have also been added to the office two large fireproof rooms, arranged for safe and systematic keeping of books, drawings, and other valuable records. The company now have four such rooms, in which are stored the records of the establishment, from its inception to the present time.

To the company's 14 acres they have recently added considerably by leasing an adjoining property, thus acquiring a greater wharf frontage. Arrangements are about completed for installing their own electric plant, the company having heretofore depended for their current upon the city works. This will be an extensive and decided improvement. There has also been recently installed the Webster Vacuum system of steam heating, for office and shops. The pneumatic plant is being constantly added to and improved, so that it is becoming of the first order of completeness and efficiency.

HARDWARE.

Condition of Trade.

JANUARY closes with a good volume of business and no special change in the general condition, so far as prices are concerned. The trade, both large and small, are buying somewhat conservatively and orders are of such a character as to indicate that merchants are simply replenishing stocks and bringing them up so as to be in good shape for trade. The speculative element has practically disappeared and merchants are cautious not to overbuy. While there is no general evidence of a weakening of prices, the trade are keeping in mind the fact that there must come sooner or later a decline in many goods, and they are endeavoring to avoid being caught with heavy stocks, while in the meantime they desire to be in a position to take care of the current demand. Manufacturers, in view of the strength of the market in raw materials, are for the most part very firm in their prices, but in some cases concessions are being made to secure orders. The stocks in jobbers' hands are exceptionally large, and there is more cutting in prices than a month or two ago, indicating a disposition on the part of the jobbers to dispose of their goods rather than hold them too conservatively. The meetings of retail Hardware associations which will be held in February will be regarded by the trade with a good deal of interest, inasmuch as the opinions of retail merchants are entitled to weight and the policy they favor will have much influence on many trade questions. The financial condition continues fairly satisfactory, but some complaint is made that collections are sluggish.

Chicago.

(By Telegraph.)

The movement of Shelf Hardware is of large proportions. Jobbers report heavy mails, with orders covering their general stocks. Sporting Goods are being bought freely. Orders were placed in advance to considerable extent, but additional business is now coming in rapidly. The month of February, which is at hand, is a month in which large preparations are usually made for spring business. Jobbers report a strong demand for Tin Plate, both for Roofing and Bright Plates. Retailers are evidently not afraid to stock up at present prices. Wire Cloth is expected to advance shortly, owing to the scanty supply and the high prices of Wire, but jobbers are as yet quoting $1.50. Severely cold weather has revived the demand for Stoves, and a good trade is now reported in both Heaters and Ranges. Heavy Hardware jobbers are having not only a large business but a much greater trade than during the opening weeks of the month. They find a particularly good demand from manufacturing consumers. Conspicuous among these have been the makers of Wind Mills and other farm supplies. Orders for Iron and Steel are numerous, and almost every buyer is calling for quick shipment. Railroad business is good, but probably not quite so active as during the previous week.

St. Louis.

Trade continues in fine shape and jobbers in this district say prospects for a continuing run of business were never better. Just now manufacturers are being pushed to make much needed deliveries. Track Chains and Clevises are actually scarce. Stocks of these are very much broken. Wire Cloth is also firmly held at $1.50 and shortage already apparent. Orders are coming in heavily for Screen Doors. An unusual demand exists for Cross Cut Saws. The heavy call for Hand Saws, Planes, Hatchets, Rules, Squares and kindred tools for mechanics' use is eloquent and significant. Unemployed labor does not busy itself buying tools. Use, not grease, keeps the rust out of mechanics' tool kits nowadays. Wire Nails are in excellent movement and local trade is specially active in purchasing. Wire is rather quiet as being somewhat out of season. Galvanized Sheets are stiffening, and one of the largest mills has advanced Black Sheets 10 cents per hundred pounds in order to check, they say, the heavy demand. Whether other mills will follow suit has not yet developed. Builders' Hardware is quiet for the moment, but not any heavy trade is expected for the next 30 days, or until weather opens up. Stock of Lignum Vitæ has been exhausted practically and there is little to be had. There is no apparent change in the Heavy Hardware line, and values of iron and steel show no decline in this market. Inquiries are quite numerous and of a better tone. Traveling representatives are on the road and getting a fair amount of orders. In many staple goods manufacturers are considerably behind orders. Norway Iron is reported to have been advanced $5 per ton by importers at seaboard, following mill advance abroad.

Philadelphia.

SUPPLEE HARDWARE COMPANY.—The close of the month of January, 1900, shows the year opened in Hardware circles in our city in a manner which can be looked upon as satisfactory. Orders from salesmen reveal the fact that goods bought by the retail merchants during the year 1899 did not overstock them, and even at this date the stock of the average customer can be looked upon only as what is requisite to supply the ordinary trade. Indeed there is no indication that on a general line of Hardware their shelves are sufficiently supplied with goods to meet the increased demand of trade which is practically in view for the year 1900.

After persistent efforts continued during the entire year 1899, the jobbing trade have succeeded in getting their stocks in a good maximum condition, although a scarcity in some lines of goods still exists, and we could name many instances, and on many kinds of goods, where the jobber did not receive some goods that were ordered from four to six months ago. The wholesale trade probably never passed through a year when, as a rule, it was so difficult a matter to keep their entire line on every article sufficiently intact to supply a quick demand. The jobber, however, is now in a condition to fill orders intrusted to his care in a manner perhaps never before surpassed, owing to the fact that he starts the year 1900 with perhaps a larger stock of goods than ever before.

The mind of the average retail merchant has been disabused of the fear which existed eight months ago that goods would not remain at the then existing prices. While they were slow to reach conclusions, every indication that then existed was for still higher prices. These indications were confirmed, and for the year 1900 the retail merchant who will show timidity in purchasing, fearing goods will decline, will lose more money in any attempt to starve his stock in the loss of trade than he would if he kept his stock of goods up to the maximum. All will admit perhaps that in the far dim future there will be some equalizing in prices, some goods may go lower, but we should not overlook the fact that it required ten long years from the time goods began settling in price until they reached the minimum prices which existed in the fall of 1898. No one person, or ten thousand persons, can stop the flow of trade that will exist during the year 1900; nothing short of an upheaval far beyond the war in the Transvaal can have a demoralizing effect

which will reach to the stoppage of trade. As a whole there are very few goods in the line of Hardware that are controlled by combinations, or what are known as trusts. Where these do exist we admit it is in their power to take the especial goods above legitimate values, but abnormal prices can be counted upon the fingers of any one reader of *The Iron Age*, and do not affect the entire business, but are confined to one or to a few commodities.

Failures during the past year have been at a minimum, both in regard to numbers and amount involved, and the few that have been sifted out of trade during the past year have been those possibly who were insolvent and could stand no longer, possibly leaving those in trade in a better condition than heretofore.

The year opens showing fair collections.

Omaha.

LEE-GLASS-ANDREESEN HARDWARE COMPANY.—During the past two weeks nothing has occurred in the way of important changes in the business situation of this section of the country. The time when spring business will be the leading feature of the condition of trade is fast approaching, and both jobbers and retailers are confident that an abundance of business will appear as soon as the winter season shows signs of departure.

The volume of business transacted during the month of January has been satisfactory, and while the amount of orders received for immediate consumption have been fully up to expectations, the advance orders booked for later shipment are of such variety and extent that would indicate a run of business of large proportions later on.

Prices throughout are well maintained. Desultory advances continue to come forward, and the only decline to note is on Copper Sheets, owing to a reduction in price of the raw material.

It is possible that owing to the high prices of some staple materials the demand may be curtailed to a certain extent, and some enterprises may be postponed on account of this, but we are not of the opinion that this will affect the general volume of business to any noticeable extent.

Portland, Oregon.

CORBETT, FAILING & ROBERTSON.—Conditions in our territory are very much as last reported. The season is very forward and trade continues to feel the effect of same. Certainly with the large output of farm products that Oregon enjoys, to be divided among so sparse a population compared with Eastern and many Western States, we ought to show considerable progress. Our State produced more hops and wool in 1899 than any State in the Union. In lumber, our resources are almost limitless. Millmen from Wisconsin and Minnesota continue to move West to be in the swim. Our port in a week cleared some 800,000 bushels of wheat foreign bound. These exports coming from a population of less than 400,000 show a large percentage per capita. Our manufacturing enterprises are steadily increasing and mills are well sold up, so that the future surely looks bright. Hardware is moving well considering the season.

Prices are not as well maintained as they might be. Collections are slow in many sections and that, too, after a bountiful harvest.

San Francisco.

MILLER, SLOSS & SCOTT.—The trade of the Pacific Coast is very well satisfied with the outlook for the coming year, if the month of January can be used as a criterion. The demand for all kinds of Hardware, Iron and Steel is good, notwithstanding the prevailing high prices.

Preparations are now being made for the rush to the Cape Nome and the Alaska gold fields, as from appearances a great many will seek the new country, reports from which are of a very encouraging nature.

Building Hardware is in good demand, as are Sporting Goods, Fishing Tackle, &c.

Taking all together, everything looks favorable for a prosperous year.

Cleveland.

THE W. BINGHAM COMPANY.—The first month of the new year has shown a good demand for Shelf Hardware. The trade on heavy goods with the merchant trade has not been large. The demand for Wire and Nails at regular prices has been very light. This, however, can be attributed to the fact that no merchant seems to care to load up at the present high range of values, and, without doubt, the high prices will restrict consumption; but trade on regular goods has exceeded our expectations. The demand for Iron and Steel with the consuming trade is active.

From the present outlook we would predict a good business for the spring months.

Nashville.

THE GRAY & DUDLEY HARDWARE COMPANY.—The spring trade, which usually opens here in January, is now on. The bright sunshine, with the thermometer in the 60's, reminds the farmers that spring is rapidly approaching, and the country merchant is being called upon for Plows, Hames, Chains and other Plow goods. As a result the jobbers just at this time are unusually busy. For the first time in the history of our company we are running a night force, who work all night in our order department. Nails are moving quite freely, but Wire, on account of the high price, is moving slowly. Wheat is looking well, and the future outlook for business is good. The clear mild weather we have enjoyed this month has been especially favorable for building.

Collections are fairly good. Some retail buyers, who in a spirit of speculation bought rather freely, are in some instances asking slight extensions, but as some of the jobbers have been dominated by this same spirit of speculation, they find themselves with considerably more goods than ready money, and so far as we are advised are not disposed to extend payments, but are insisting on settlement at maturity. One significant fact in regard to collections is that more buyers of the cotton section are availing themselves of the cash discount than we have heretofore noted.

St. Paul.

FARWELL, OZMUN, KIRK & CO.—January business is ahead of last year, and is fully up to expectations. Orders are generally not large, but dealers are keeping up their assortments full and they are also giving satisfactory orders for seasonable goods.

The weather has been favorable for outdoor work, and farmers are doing considerable repairing, which makes a demand for many lines of goods.

Advances in prices have not made any appreciable falling off in consumption of most articles. The higher prices of lumber and other material may have some effect during the season on the amount of building enterprises undertaken, but this feature will probably be more than matched by the increased demand for goods resulting from the general and remarkable activity of business and industries now prevailing throughout the world. The time has passed for buying any considerable quantities of goods in anticipation of advances, but there can be no doubt, in our opinion, of the times being favorable for every merchant who is in condition to use his opportunities to keep his stock up complete and not to allow the assortment to be broken.

The prospects for the year's business are certainly now very satisfactory, and unless unforeseen circumstances arise to interfere we may reasonably expect a very prosperous year.

Notes on Prices.

Wire Nails.—The Wire Nail market remains in an unchanged condition. About the usual amount of business is being done that is expected at this season. The market is firm at manufacturers' quotations, which are as follows, f.o.b. Pittsburgh; terms, 30 days, 1 per cent. off in ten days:

To jobbers in carload lots	$3.20
To " in less than carload lots	3.22½
To retailers in carload lots	3.35
To " in less than carload lots	3.45

New York.—Local conditions in the Wire Nail market are the same as given in our last week's report. Demand is moderate and manufacturers' prices are generally adhered to. Small lots from store show a variation in quotations. Quotations are as follows:

To retailers, carloads on dock	$3.53
To " less than carloads on dock	3.66
Small lots from store	$3.50 to 3.75

Chicago, by Telegraph.—Manufacturers report a strong demand, with large specifications for quick shipment coming from many of the leading jobbers, indicating that their stocks are light. The usual spring activity is shortly due, when a much larger movement is confidently expected. Jobbers report an excellent demand, notwithstanding the high rates ruling. Prices are maintained on the basis of $3.53, Chicago, for single carload lots and $3.63 for small lots from stock.

St. Louis.—An excellent, and some say heavy, demand is had for Wire Nails and the local trade is buying freely. Almost every general order specifies Nails. Single carloads continue to be quoted at $3.58, base, St. Louis, and small lots at $3.68.

Pittsburgh.—The demand for Wire Nails continues to be largely confined to immediate requirements. The volume of trade is only fair, but is expected to soon show material increase, in view of the fact that spring trade will soon open up. It is intimated that another advance in prices of Wire Nails may be made before a great while. We quote, f.o.b. Pittsburgh, terms 30 days, 1 per cent. off in ten days:

To jobbers in carload lots	$3.20
To " in less than carload lots	3.22½
To retailers in carload lots	3.35
To " in less than carload lots	3.45

Cut Nails.—A meeting of the Cut Nail manufacturers was held in this city this week and Eastern prices were advanced 5 cents per keg. Some manufacturers were of the opinion that a continuance of the differential in the price of Cut and Wire Nails will serve to further popularize the former. There is an increasing demand for Iron Cut Nails, particularly from some sections of the West, where their superior durability for outside work is recognized.

New York.—The demand for Cut Nails continues moderate, but up to jobbers' expectations for the season. There still exists some difference in quotations for small lots from store, but otherwise the market is firm. Regular quotations have been as follows, the local market not yet being affected by the manufacturers' advance in price:

To jobbers in carloads on dock	$2.68
To " in less than carloads on dock	2.76
To retailers, " " " "	2.86
Small lots from store	2.75 to 2.80

Chicago, by Telegraph.—An excellent demand is observed in this branch, but of course within certain well defined limits. Prices are continued at $2.68, Chicago, for carload lots and $2.90 for small lots from stock.

St. Louis.—Prices have now been moved up and jobbers quote $2 90, base, out of stock. A very good sale is had for Cut Nails.

Pittsburgh.—We are advised that the established prices on Cut Nails, as arranged by the manufacturers in December, are being firmly held. There is a moderate demand, which is expected soon to increase. We quote Cut Nails at $2.50 in carload lots and $2.65 in less than carload lots, f.o.b. Pittsburgh, freight to destination added. Terms 30 days net, or 1 per cent. off for cash in ten days from date of shipment.

Barb Wire.—The Barb Wire market continues firm at former quotations. Manufacturers are preparing to meet the spring demand. Quotations are as follows for domestic trade, f.o.b. Pittsburgh, net cash, or 1 per cent. off in ten days:

To jobbers in carload lots, Painted	$3.65
To " " Galvanized	3.80
To " in less than carload lots, Painted	3.67½
To " " " " " Galvanized	3.82½
To retailers in carload lots, Painted	3.80
To " " Galvanized	3.95
To " in less than carload lots, Painted	3.90
To " " " " " Galvanized	4.05

Chicago, by Telegraph.—A much better trade is reported by manufacturers, who are receiving heavy orders for both Plain and Barb Wire in anticipation of the usual spring demand. The character of the orders indicates that a much larger business is to be expected when spring activity sets in during the coming month. Quotations are as follows, Chicago delivery: Single cars of Plain Annealed Wire, $3.38; Painted Barb Wire, $3.98; Galvanized Barb Wire, $4.13, with 10 cents additional for small lots from jobbers.

St. Louis.—Jobbers are firm in prices, but demand is rather light, as may be expected at this time. Painted in single cars is quoted at $4.03, with $4.13 for small lots. Galvanized is quoted at 15 cents above these prices.

Pittsburgh.—Buyers are placing orders for Barb Wire only for immediate wants. The spring trade in Barb Wire this year may be somewhat curtailed, owing to present prices. We quote Painted Barb Wire at $3.65 in carload lots to jobbers, with an advance of 15 cents for Galvanized, all f.o.b. Pittsburgh; terms 30 days, or 1 per cent. off in ten days.

Smooth Wire.—The demand for Smooth Wire continues moderate. The market is firm at the following quotations, f.o.b. Pittsburgh; terms 30 days, or 1 per cent. off in ten days:

To jobbers in carload lots	$3.05
To " in less than carload lots	3.07½
To retailers in carload lots	3.20
To " in less than carload lots	3.30

Pittsburgh.—There is a very satisfactory volume of business in Smooth Wire and demand is increasing. We quote: To jobbers in carload lots, $3.05; to jobbers in less than carload lots, $3.07½; to retailers in carload lots, $3.20; to retailers in less than carload lots, $3.30, all f.o.b. Pittsburgh. The charge for galvanizing is 50 cents on sizes from Nos. 6 to 14 inclusive; on Nos. 15 and 16, 85 cents, and on Nos. 17 and 18, $1.10.

Sash Weights.—The market for Sash Weights generally is characterized by a firm tone, with a good deal of diversity in the quotations of the different manufacturers, according to their locality. We are advised that the price in the New York market remains steady at $30 per ton, delivered, but in other Eastern points considerably lower prices prevail and still lower prices in the West.

Shot.—A slight reduction from the prices announced in our last issue has been made by the manufacturers of Shot under date January 29. The new prices are as follows, net cash 30 days, or 2 per cent. discount for cash in 10 days, with the usual abatement on ton lots:

Drop Shot, sizes smaller than B, per 25-pound bag	$1.47
" " B and larger sizes, per 25-pound bag	1.72
Buck Shot, per 25-pound bag	1.72
Chilled Shot, per 25-pound bag	1.72
Dust Shot, per 25-pound bag	2.10

The Hull & Hoyt Company.—Under date of January 15 the Hull & Hoyt Company, Danbury, Conn., adopted the following revised list prices on their Blacksmiths' Leather Aprons:

	Per dozen.
No. 1, 26 x 34 inches	$18.00
" 2, 28 x 38 "	21.00
" 3, 30 x 42 "	24.00

This advance has been made necessary by the increased cost of Leather. Their discounts remain as before and are as follows, terms 30 days, or 5 per cent. discount for cash in ten days:

	Per cent.
On lots of less than one dozen	20
" " " one dozen or more	25
" " " three " " "	30

An excellent demand is reported on these Aprons, which are handled by many large jobbers throughout the country.

Solid Handle and Robinson Wrenches.—The Peck, Stow & Wilcox Company, 27 Murray street, New York, an-

nounce the following advances in the price of their Solid Handle and Robinson Wrenches, effective February 1:

	Per cent.
Solid Handle Wrench	40 and 10
Robinson Wrench	50 and 5

Cordage.—Rope continues to be quoted on the basis of 15½ cents per pound for Manila, 7-16 inch and larger, and 10½ cents per pound for Sisal of corresponding size in less than carloads. The Sisal market shows some weakness and quotations for Sisal Rope could no doubt be shaded ¼ cent per pound. Some jobbers are shading prices on both Sisal and Manila Rope ½ cent per pound, subject to stock. Demand is not excessive. Jute Rope is firm at 7 cents for No. 1, ¼-inch and up, and 6¼ cents for No. 2, ¼ inch and up. Manufacturers' quotations for Rope in less than carload lots are as follows, with a reduction of ¼ cent per pound for carloads:

	Per pound. Cents.
Manila, 7-16 inch and larger	15½
" ⅜ inch	16
" ¼ and 5-16 inch	16¼
Sisal, 7-16 inch and larger	10¾
" ⅜ inch	11
" ¼ and 5-16 inch	11¼
" Lath Yarn, Medium and Coarse	10

Manila Tarred Rope, 15 thread, is quoted at 15½ cents, as is also Manila Hay Rope, Medium.

Binder Twine.—Large buyers have been slow in placing orders for Binder Twine this season owing to the high prices ruling. Dealers are purchasing sparingly, much more so than for many years at this season. A considerable amount of Twine was carried over by many of the manufacturers, and much of last year's purchases is still in the hands of country dealers, especially throughout Indiana, Michigan and parts of Illinois and Ohio, where the winter wheat crop of 1899 was a failure. Leading manufacturers and jobbers, as a rule, are not guaranteeing prices. It is understood that some of the smaller handlers of Twine are giving guarantee when it is demanded, while a few are guaranteeing without hesitation. Manufacturers are of the opinion that if the Philippine ports were now opened fiber would not reach here by sailing vessels in time to make up into Binder Twine for use during the coming harvest. Some manufacturers express the belief that there will be a demand for every pound of Twine that can be produced out of the fiber that is available. The following quotations are made on Twine in carload lots, f.o.b. New York, Philadelphia or Boston, with a reduction of ⅛ cent per pound for orders less than a carload lot and over 10,000 pounds, and a reduction of ¼ cent per pound for carload lots:

	Cents.
White Sisal, 500 feet to pound	11¼
Standard, 500 feet to pound	11¼
Manila, 600 feet to pound	14¼
Pure Manila, 650 feet to pound	15¾

Twine, f.o.b. Toledo, Detroit, Jackson, Peoria, Chicago and Milwaukee, is quoted ¼ cent higher. For Minneapolis delivery or delivery at points taking Minneapolis freight quotations are ½ cent above Eastern prices.

Glass.—The American Window Glass Company last week revised discounts, to take effect at once. The change was in the nature of a reduction, which, it is claimed, will amount to about 2½ per cent. The reduction is not as sweeping as would at first appear, especially in the Eastern district, where the delivery is f.o.b. factories, purchasers paying their own freight. Carload quotations are as follows. Single Strength:

	Per cent.
First Bracket	85 and 25
Second third and fourth Brackets	90
Fifth Bracket and above	90 and 5
Double Strength:	
First five Brackets	89
Sixth Bracket and above	90 and 10 and 10

While these are the quotations made they will be of little service in purchasing, as probably a very small proportion of the orders will be filled by the American Window Glass Company, owing to specification restrictions and other conditions, which, it is understood, are more rigorous than before the reduction. The Eastern division of the jobbers' association has fixed the extreme price for Window Glass east of the Alleghenies at 85 and 10 per cent. discount for the first bracket and 85 and 20 per cent. discount for all other brackets, of either Single or Double Strength. The latter price is not available in all instances. It is understood that a Chicago Glass jobbing house recently quoted Glass at 90 per cent. discount. As has been intimated before, the price war appears to be for the purpose of forcing outside factories to sell at ruinous prices. Those who are able to hold their Glass are not meeting the present or previous cut in prices. There is also a serious lack of skilled labor, the spare places being estimated at 15 per cent. It will be readily seen that if some independent or co operative factories discontinued operation their workmen could be employed in the combined factories.

Oils.—*Linseed Oil.*—Under date of January 29 the price of City Raw Linseed Oil was advanced to 56 cents in lots of five barrels or more and to 57 cents in lots of less than five barrels. Out of town brands are quoted 2 cents per gallon less. Calcutta Raw Oil is held at 68 cents per gallon. It is understood that very few independent crushers are operating, owing to the high price of Seed. Demand is light.

Spirits Turpentine.—The general trend of Turpentine has been upward in price durng the past week, on reports of higher prices and a strong market at Savannah. At this point Southerns are now quoted at 54 cents per gallon and machine made barrels at 54½. A limited amount of Turpentine is changing hands and the market is quiet but steady at the above figures.

Hardware Organizations.

Minnesota and Northwestern Retail Hardware Associations.

An attractively printed souvenir programme is about to be issued pertaining to the fourth annual convention of the Minnesota Retail Hardware Association and the second annual convention of the Northwestern Retail Hardware Association, to be held in Duluth, February 14, 15 and 16 next. The souvenir is dedicated to Charles F. Ladner of St. Cloud, Minn., first president of the Minnesota Association, "to whom much of the success of this association is due."

A copy of the programme will be sent to every Hardware merchant in Minnesota, Wisconsin and North Dakota, the three States comprising the Northwestern association. The programme contains among other features a history of the Hardware trade of the Northwest, descriptive matter about the city of Duluth, a history of the association with its aims and purposes, an article on the mutual fire insurance branch, &c. The programme is well gotten up, and cannot fail to be of interest to its merchant recipients.

Ohio Hardware Association.

We wish to correct a mistake in the notice in our last issue of the convention of the Ohio Hardware dealers, shortly to be held in Cleveland, in the names of some of the Committee of Arrangements of the Cleveland manufacturers and jobbers for the entertainment of those who attend the convention. The committee is as follows: C. S. Van Wagoner, chairman, Van Wagoner & Williams Hardware Company; W. M. Powell, first vice-chairman, Ferro Steel Company; H. F. Lyman, second vice-chairman, Upson-Walton Company; J. Q. Riddle, treasurer, Lockwood, Taylor Hardware Company; Munson A. Havens, secretary, Chamber of Commerce.

The most cordial feeling exists in Cleveland toward the Ohio Hardware dealers, and there is a determination to give them a hearty welcome, and entertain them most hospitably. The committee are in hope the membership may be materially increased to the practical benefit of the Ohio Hardware dealers, and are having this end also in view. It is greatly to be desired that there shall be a large attendance, and that many ladies may be among the number. The advantages of getting

the members of various occupations together are being practically demonstrated in many lines of business, and the Hardware dealers of Ohio ought to help along the movement in their own ranks.

The Work of Retail Hardware Associations.

FEBRUARY will be an especially important month, so far as the matter of the organization of the retail Hardware trade is concerned.

ANNUAL MEETINGS.—There will be during the month meetings of associations organized in the following States: Wisconsin, Indiana, Iowa, Minnesota, Missouri, North Dakota, Illinois and Ohio. Some of these anticipate an attendance of several hundred members, including many energetic and successful merchants, whose progressiveness in their own business leads them to take an active part in the promotion of associations which will tend to strengthen the position and advance the interests of the retail trade in general.

GROWTH OF THE MOVEMENT.—From the above statement it will be evident that marked progress is being made by retail merchants in the matter of associations. This is especially true in the West. For certain reasons there is less doing in this direction in the East, where there would seem to be nearly as urgent need of such concerted action.

DIFFICULTIES IN THE WAY.—The principal difficulty in the way of such organizations is in awakening the interest of the trade and bringing merchants together for acquaintance and deliberation. The retail merchants are scattered through different towns and cities, and have no general contact with one another. Some time and expense are involved in responding to the call for a meeting, and the pressure of separate business interests tends to occupy them and keep them at home. When once they are brought together, if the movement is under intelligent and efficient management, they recognize the advantage there is in meeting their fellow merchants and in consulting, and perhaps taking action on the matters which directly concern them.

SUCCESS DURING 1899.—The reports from most of the associations in regard to their work in 1899 are very encouraging. Several of them report large accessions to their membership, and are looking forward to large and influential conventions. The position of several of these associations is such as to command the attention of manufacturers and jobbers. Both of these classes will doubtless be represented at the gatherings in larger numbers than ever before, as thus a very pleasant opportunity will be afforded them of meeting their customers and showing them personal attention.

PROFITABLE MEETINGS.—Those who are actively concerned in the conduct of these associations are charged with the responsibility of making the annual gatherings so interesting and profitable that the members will be convinced of the value of the association as justifying itself in its practical usefulness. They will thus return home with broader views and new enterprise, and be enthusiastic promoters of the movement. If, however, there is a lack of management and the meetings are conducted in a slipshod fashion, and without definite plan or purpose, the result will be detrimental to the organization. Attendance at the meetings involves the expenditure of time and money, and there should be more than an equivalent in the suggestiveness and helpfulness of the gathering and the definite work accomplished. The almost uniform success of the associations heretofore is an evidence that they are under good management and attended by earnest, able and progressive men.

Questions Before the Associations.

Many questions closely connected with trade interests naturally come before these gatherings, such as the following:

THE PROTECTION OF THE RETAILER'S TRADE.—The encroachment on the retailer's territory by either jobbers or manufacturers naturally comes prominently before these associations. The retailers are in a position to protest against such interference with their trade, and manufacturers and jobbers are presumably ready to heed such protests and to leave the business with consumers to retail merchants.

FREIGHT QUESTIONS.—In some instances the matter of freight classification, differentials, &c., will come before the convention as directly related to the interests of retailers. In this connection the action of the Pacific Retail Hardware Association, reported in another column, may be referred to as an illustration. The position of retailers on these questions will obviously depend on the special circumstances of each case.

MANUFACTURERS' METHODS OF MARKETING GOODS.—In view of the active efforts which have been made by the jobbing interests to induce manufacturers to make a sharp distinction between jobbers and retailers, and to establish a wider difference in price than has usually existed, it is probable that the whole subject will be discussed from the retailer's point of view. Many of the larger retailers especially, who have been accustomed to get pretty close prices, find themselves out in the cold, as they term it; and do not altogether relish the position. There is a disposition on the part of many, looking at the matter in the light of their own interests, to regard with more favor the use of quantity discounts by the manufacturer rather than classified lists, which put the houses down as either jobbers or retailers, and determine inflexibly the prices which should be given to each class.

DEPARTMENT STORES AND CATALOGUE HOUSES.—This will certainly be a prominent subject of discussion. In view of the inconvenience suffered by the trade on account of this kind of competition earnest consideration will be given to the question as to how the evil can be most effectively combatted. The success which has attended efforts in some of the States is dissuading jobbers and manufacturers from supplying department stores and catalogue houses is said to be encouraging to further movement in this direction.

NATIONAL ASSOCIATION.—Events are pointing to the probability that a national association will before long be attempted, and the friends of such a project point to the fact that in the present condition of things protests to manufacturers or to jobbers from the retail trade of a single State are not always influential, when they would certainly have great weight if coming from a body representing many States. The difficulties in the way of the conduct of such a national organization are, however, recognized; and many are of the opinion that State associations, with representation in a national organization, are most likely for some time at least to be successful.

CO-OPERATIVE BUYING.—The success which has attended the purchase of goods on the united orders of merchants favorably situated will probably suggest the question as to whether or not anything can be done in this direction by the associations as a whole, or by individuals connected with them.

BUSINESS METHODS.—The educating influence of the gatherings of retail merchants will, apart from whatever action they may take on the great questions such as the above, doubtless be among their most useful results. The discussion of business methods, the suggestiveness of conferences between bright and progressive men in similar, but always somewhat different circumstances, will assuredly give to merchants who are desirous of learning practical assistance in the conduct of their business, which will render them better and more successful merchants.

IN our advertising columns it will be seen that Henry Disston & Sons, Philadelphia, call attention to the Australian sawing contest held at Ulverstone in December last, and the honorable place taken by their Saws.

Pacific Retail Hardware Association.

THE second annual meeting of the Pacific Retail Hardware Association was held at Chico, Cal., on January 17 and 18. The first day was devoted to executive sessions of all the members, in which subjects were discussed appertaining to the trade, and on the second day the representatives of the manufacturing and wholesale trade were invited to be present and discuss with the association the deliberations and conclusions arrived at by the association.

WEDNESDAY'S SESSIONS.

The president, John C. White, called the meeting to order at 10 a.m., and on the roll being called, the following firms and members responded:

P. Adkins & Co., Red Bluff.
R. M. Beebee, Gridley.
Bills & Putnam, Oroville.
Billiou & Applegate, St. John.
H. H. Buhring, Auburn.
J. P. Burbank, Anderson.
J. E. Boorman, Marysville.
R. B. Cranston, Woodland.
Ed. G. Carter, Cottonwood.
W. M. Doty, Biggs.
M. Diggs, Woodland.
Denny, Bar, Parker & Co., Scott Valley.
Elam Biggs Hardware Company, Grass Valley.
Eppinger & Co., Dixon.
Estate of G. W. Freeman, Willows.
J. Grover, Colusa.
B. P. Grover, Williams.
T. B. Gibson, Woodland.
Hampton Hardware Company, Marysville.
L. L. Hubbell, Chico.
Hubbard, Earll & Co., Chico.
Robert J. Hancock, Auburn.
Hochheimer & Co., Germantown.
John Haenny, Lincoln.
L. O. Johnson, Arbuckle.
J. D. Johnson, Dixon.
R. O. Kimbrough, Sacramento.
Kaufman Bros., Corning.
H. D. Knight & Bros., Elk Creek.
J. King, Auburn.
J. P. Klemmer, Willows.
Legg & Schaw Company, Nevada City.
Lyon and Garrett, Red Bluff.
McCormick-Saelzter Company, Redding.
J. A. Feeley, Chico.
Mitchell & Son, Colusa.
C. J. McBride, Lincoln.
A. L. Nichols, Chico.
R. Noell, Grass Valley.
Scribner & Murdock, Orland.
John L. Swank, Colusa.
John Simpson, Tehama.
A. C. Stagner, Wheatland.
Benjamin Smith, Maxwell.
O. Schlueter, Woodland.
Geo. E. Turner, Nevada City.
White, Cooley & Cutts, Marysville.
Walker & Scribner, Durham.
Young & Barker, Napa.
James Young, Redding.
W. E. Hawkins, Ager.
H. E. Stimmel, Yreka.
Bauer & Schluckebeir, Petaluma.
H. G. Dorsch, Quincy.
M. Q. Mechan, Placerville.
Pioneer Hardware Store, Placerville.
Blake & Reed Company, Junction City.
F. A. Autenrieth, Yreka.
Russell & Lefevbre, Redding.
J. F. Newman, Chico.
Sol. Pettit, Chico.

After the minutes of the last meeting had been read and approved, the president delivered the following address:

President White's Address.

Having had the honor of being chosen as your first president, it devolves upon me to open this, our second meeting, with a short address, as our programme indicates.

The great objects of this association are to secure our just rights as retailers of Hardware, Machinery, Vehicles, &c., and establish proper and definite relations with manufacturers and jobbers and act on all matters pertaining to the general welfare of the trade.

ACCOMPLISHING THE ASSOCIATION'S OBJECTS.

To accomplish this we must be conservative and avoid insisting on impossibilities or ideas which conflict with good business principles, and try and look at both sides of a question, remembering that others have rights as well as ourselves. But when after weighing any matter, and duly considering the equities involved, we find it necessary to make a stand, we should, as one man, present a solid front and insist on our rights.

By being fair, liberal and just, we can command proper recognition. In other words, be sure you are right and then go ahead.

Then the question arises, what is right and when are we right? Many men have many minds, and differences of opinion arise. It is to decide what is right that we have to consider and it is our duty to give the subject our best attention.

The programme of business indicates in a general way what the deliberations of the association will be directed to, but under the head of new business any subject for discussion which members propose bearing on the welfare and objects of the association will be in order for consideration.

Another object of the meeting is to infuse

MORE VIGOR INTO OUR WORK,

ratify what has been done in the past year, and formulate plans for greater usefulness in the future. Every mail brings us pamphlets and reports of the doings of similar associations in the East, and it is an accepted fact that an immense amount of good is always accomplished by bringing together men engaged in similar pursuits and industries, so that they can exchange views and make comparisons, and when they leave the meeting they have learned something and had their minds and ideas broadened and many prejudices removed.

I will not attempt to outline the policy of this association or its deliberations, and I hope the freest discussions may be brought out, and the questions on the programme may be settled to our satisfaction, and when so settled that they will be supported by the whole strength of the association.

TRANSCONTINENTAL RATES.

There is a question which will come up at the meeting to-morrow which I feel it my duty to call your attention to, and that is the attitude of this association on the question of transcontinental rates. The subject will, I learn, be laid before you by both parties to the controversy, and I will specially call your attention to it, and ask that you do not make up your minds too quickly, as it involves great principles.

California, as you are aware, is not such a great manufacturing State as some others in the East, and its industries, manufactories and commercial interests need some fostering care. We, as citizens of this State, must be patriotic and look to the interests of the body politic rather than to some small personal advantages, and consider that a little temporary gain might be too dearly paid for.

In conclusion, I will ask you to be loyal to yourselves and the members of the association, and I trust that your deliberations may be of a wise and harmonious nature, such as will redound to the credit of the association and promote peace and good will among all.

The reports of the secretary and treasurer were read, and on motion were received and ordered placed on file.

The Executive Committee then made the following report:

Report of Executive Committee.

Your Executive Committee, in making a first report to you, wish first to express their appreciation of your

loyalty to the work we have undertaken. You put your confidence in us by electing us to the executive board, and as members during the first year of your organization we have found you obedient to our calls and faithful to the organization. You selected us to represent you in the demands you might wish to make and expected

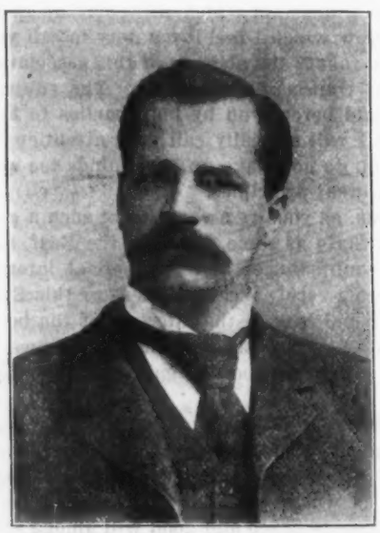
JOHN C. WHITE, President.

us to protect your interests, as well as be fair and just to the interests of others. It has been our aim to meet your expectations, and how far we have succeeded we will have to leave for your determination.

We feared at the outset that the work we had undertaken would be laborious and of a disagreeable nature; that the complaints would be many and that we might not be able to settle them without the regular course of trial. We congratulate ourselves that such has not been the case, and that we have found

OUR WORK A PLEASURE

instead of labor. It has brought us in contact with pleasant and congenial gentlemen, both among our members and those interested who belong to the wholesale trade. We are pleased that we have been able to settle all grievances between parties without the regular course of



OSCAR C. SCHULZE, Vice-President.

trial. We have found our members who were aggrieved liberal in their views, and willing to look on both sides of a question, willing to waive any little injury that might have been done them individually for the purpose of accomplishing a general result.

We have also found those in the wholesale trade, of whom complaints were made, ready to investigate to determine the wrong done, and anxious to correct any violation of the established rules of trade. These admirable traits have made our work for the year much easier than we had anticipated.

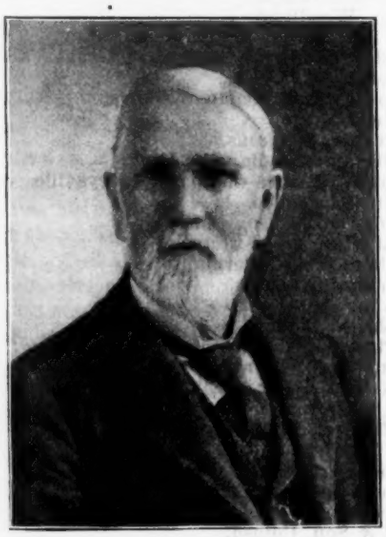
DISTRIBUTING PRINTED MATTER.

The Executive Committee, upon its organization, immediately after adjournment of our first annual meeting, entered upon its first work, that of printed matter for distribution. We sent to each of you the constitution and by-laws adopted by you, in a neatly printed form. We also distributed them to all dealers in Hardware in the State for the purpose of increasing our membership.

The result of our efforts in this way is shown by the secretary's report. While it did not increase our membership as much as we desired, yet from all parts of the State, and the State of Nevada, we have received encouragement and warm moral support.

CONFERENCE WITH WHOLESALE TRADE.

Your committee also issued a circular letter of date January 28, 1899, copy of which we mailed to each of you. In that letter we expressed the views of what we thought should be observed by the wholesale trade, and



WM. EARLL, Treasurer.

in order to have more fully expressed opinions this letter brought about a meeting between the principal wholesale trade of San Francisco and Sacramento and your Executive Committee, which was held in Anvil Hall, San Francisco, February 10, 1899. The conference was well attended, Mr. Hayden of Dunham, Carrigan & Hayden being elected to preside, while Mr. Smith, secretary of the Jobbers' Association, acted as secretary.

The results of this conference were no doubt of much good to the individual members of this association. While we did not get everything asked for in our letters of January 28, yet we got much that we had not had before. Our letter of March 4, 1899, to our members, copies of which you have had, fully stated what we were promised, and we are glad to report that

DIFFERENTIALS IN PRICES AND CLASSIFICATION OF CUSTOMERS

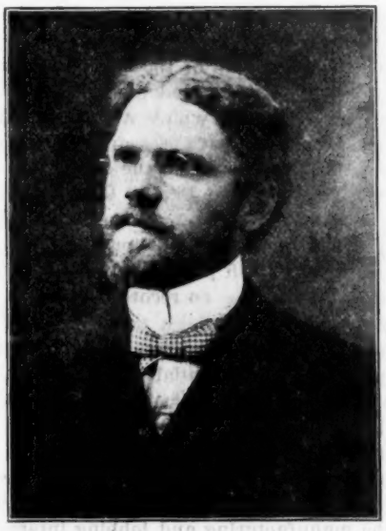
agreed upon continues in effect, and we are sure has been beneficial to the members of this association.

Our work during the last few months of our term has been light, not but that there is a great deal to accomplish, but perhaps owing to the muchly-disturbed conditions of trade, each of you has been occupied in looking out for the many changes, and has let smaller disturbances alone.

At a meeting of your Executive Committee held in Marysville about November 21, a programme was adopt-

ed for this meeting, selecting such objects as they thought might mostly interest you; not, however, in any way attempting to bar you from any subject you might wish to bring before this association.

The wholesale trade has also been invited to be present on the second day of our meeting, that each of



ROBERT W. BOYD, Secretary.

you might exercise the same privilege as your Executive Committee, that of meeting in proper discussions those whom we have found to be generally disposed to be just and fair. Your committee feel greatly pleased with the spirit in which they have been met by the wholesale association, and the very few complaints which have been lodged by the members testify to the fact that the idea of a proper appreciation of each other's rights has prevailed and been in practice to a greater extent than formerly.

On January 15, 1900, this committee received the resignation of J. M. Berry as secretary of this association, he having terminated his connection with the retail trade. The resignation was accepted, and R. W. Boyd, member of Hampton Hardware Company of Marysville, was chosen by us to fill this vacancy in accordance with

GEO. A. LEGG, Executive Committee.

Article 14 of our constitution and by-laws. The committee regrets very much to part with Mr. Berry, as he has been a faithful and efficient member of the association.

At a meeting held in Chico, November 25, a Committee of Entertainment was appointed to look after your welfare at this, our second annual meeting. The members residing in Chico were selected, and into their hospitable hands we have delivered you.

Faithfully submitted,

JOHN C. WHITE,
OSCAR C. SCHULZE,
JOHN SIMPSON,
ELAM BIGGS,
ROBERT W. BOYD.
} Members of Executive Committee.

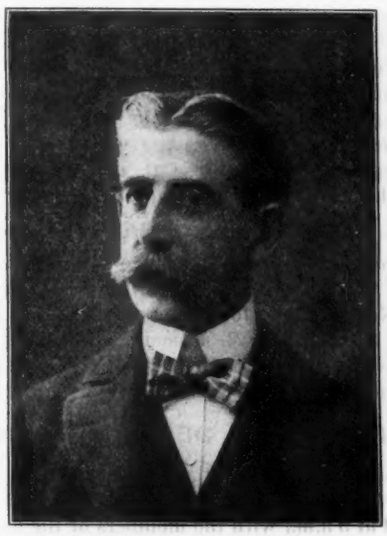
On motion the report was unanimously adopted. An adjournment then took place until 1.30 p.m.

On reassembling, Allen Cooley offered the following resolution:

A Retail Price.

Resolved, 1, That this association is unanimously of the opinion that it is essential for the welfare and existence of the retail dealer in Machinery, Vehicles and Farming Implements that a retail price shall be established and maintained by the manufacturers and jobbers of these articles on the Pacific Coast who expect to sell these goods to the retail dealers, and that our Executive Committee shall immediately take up the question with the manufacturers and jobbers, with the view of obviating, as early as possible, the present unsatisfactory conditions of the trade.

2. And that the Executive Committee shall report



G. A. GUTMAN, Executive Committee

what progress they make in that direction to the members of this association at an early date, so that the trade can be put on a satisfactory basis as early as possible.

The resolution was adopted.

Vice-President Oscar C. Schulze offered the following resolution, which was adopted:

Trade Excursions.

Resolved, That it is the sense of this association that we are opposed to trade excursions, as now in force by the department stores, and that our Executive Committee take such steps as they may see fit to try and correct this evil, and that they request the support of the wholesale and jobbing trade in aiding them to secure their object.

Catalogue Houses.

On the subject of the invasion of the State by catalogue houses with their seductive circulars, the opinions of those present were unanimously expressed that the only way to fight these Philistines was to sell goods cheap enough to meet any legitimate competition, but on the question of legitimate competition, it was shown that catalogue houses depended entirely upon the impression they were able to make on the minds of customers by a seemingly low price, irrespective of the quality

of goods, and that the Pacific Coast dealers had little to fear from honest competition so long as transportation rates were fairly and equitably maintained.

Case and Cartage.

The question of case and cartage elicited considerable discussion, but was ultimately delegated to the Executive Committee, with full power to act, in the hope of correcting some of the abuses.

The following resolution was offered by Geo. A. Legg:

Differential Rates.

Resolved, That we, the members of the Pacific Retail Hardware Association, do hereby agree, one with the other, to adhere strictly to the differential rates, as established by the various associations, and adopt these as a minimum, plus freight, to our respective places of business.

The resolution was adopted.

The next order of business being the selection of a place for holding their third annual meeting, Woodland, Cal., was chosen.

Election of Officers.

The following officers were chosen to preside for the ensuing year:

President, John C. White of White, Cooley & Cutts, Marysville, Cal. (re-elected).

Vice-President, Oscar C. Schulze of Eppinger & Co., Dixon, Cal. (re-elected).

Treasurer, William Earll of Hubbard, Earll & Co., Chico, Cal. (re-elected).

Secretary, Robert W. Boyd of Hampton Hardware Company, Marysville, Cal.

Executive Committee: Geo. A. Legg of Legg & Schaw Company, Nevada City, Cal., and G. A. Gutman of Hochheimer & Co., Germantown, Cal.

Auditing Committee.

An Auditing Committee of three was appointed, consisting of Elam Biggs of the Elam Biggs Hardware Company of Nevada City; John Simpson, Tehama, and J. F. Seranous of the Geo. W. Freeman Company, Willows.

At this juncture an adjournment was ordered until 9 a.m., Thursday.

THURSDAY'S DELIBERATIONS.

Pursuant to invitation the representatives of manufacturers and jobbers of San Francisco and Sacramento assembled at 9 a.m., with the members of the association.

The president reviewed the various subjects which had been discussed upon the previous day, among which was that of the question of

Graded Rates, Blanket Rates and Narrowing of Carload Differentials,

which now forms the contention between the Middle West jobbers and manufacturers and those of the Pacific Coast.

The following gentlemen, representing the manufacturing and jobbing interests of the Pacific Coast, addressed the association on this subject:

Brace Hayden, president of the Pacific Coast Hardware and Metal Association.

William R. Wheeler, chairman of the Traffic Committee.

H. D. Loveland of the Associated Grocers' Association.

Wakefield Baker of the Benecia Agricultural Works and the firm of Baker & Hamilton.

A. C. Rulofson of Baker & Hamilton, San Francisco, Cal.

John D. Sibley of Deere Implement Company, San Francisco, Cal.

A. L. Scott of Miller, Sloss & Scott, San Francisco, Cal.

A. A. Watkins of W. W. Montague & Co., San Francisco, Cal.

William Schaw of Schaw, Ingram, Batcher & Co., Sacramento, Cal., as well as others.

This subject, which was regarded as being of the utmost importance to all interested, received the closest attention, and was discussed in every phase, both from the retail point of view and from that of the manufacturers and jobbers; when the following resolution was introduced by Vice-President Oscar C. Schulze:

Present Differentials and Schedules Satisfactory.

Whereas, we recognize that the interests of the producing, manufacturing and commercial communities, both wholesale and retail, of the Pacific Coast are so indissolubly bound together and dependent upon one another that any condition which works a hardship upon one of these interests must necessarily, either directly or indirectly, bring hardship upon the others; be it

Resolved, That we, the Pacific Retail Hardware Association, in annual meeting assembled, do hereby express our satisfaction with the present existing transcontinental railway tariff principles and conditions in this State, and desire to place on record our satisfaction with the differentials and schedules that have been in effect since June, 1898, and that this association will do its best to uphold these differentials, and trust the efforts of the manufacturers and wholesale merchants of the coast will be successful in maintaining them.

The president, before a vote was taken on this question, intimated that the association should consider the resolution by themselves, and requested the representatives of the manufacturing and jobbing interests to temporarily withdraw, so that the retail association should not be influenced in any way by the presence of those whose interests might be thought to conflict or be at variance with those of the retail association.

After mature deliberation on the part of the retail association, the president called for a standing vote, when every member rose to his feet and the resolution was carried.

The joint conference then reassembled, when the president announced the result of the vote, which was received with great acclamation by all present.

This finished the business of the meeting, and a motion to adjourn was carried.

The Banquet.

On the invitation of the Entertainment Committee, consisting of A. L. Nichols, Wm. Earll, L. L. Hubbell, J. A. McFeeley, all of Chico, the representatives present were invited to a banquet in the evening, which all attended, together with some prominent citizens of the town. The evening was spent in a most pleasant and edifying manner, and with kindly expressions from every quarter the various members dispersed to their homes all over California.

Requests for Catalogues, &c

MASSEY IRON COMPANY, Kansas City, Mo., to whose organization we referred a week or two ago, request that catalogues be sent to them covering Shelf and Heavy Hardware, Iron and Steel, Wagon and Carriage Makers' Materials and Supplies and Tools and Machinery.

John W. Cook & Co., who have lately entered the Hardware business at Eutaw, Ala., advise us that they would be glad to receive copies of catalogues, price-lists, &c., pertaining to Shelf and Heavy Hardware, Stoves and Farming Implements.

The Hardware store of Davis & Bowlin, Tulsa, I. T., was recently destroyed by fire with a loss on stock of $4,000, and insurance of $500. They are making arrangements to resume business at an early date, and would like copies of catalogues, price-lists, &c., their collection of which was consumed by the fire.

Wakeman & Booth, Arcadia, La., are desirous of receiving quotations on the lines they carry in stock, including Hardware, Stoves, Mill Supplies, Tinware and Wood and Willow Ware. They expect to dispose of

about $20.000 worth of goods during the year, and state that they have ample capital on which to do it.

Rodney Gloyd has retired from the Edwards & Gloyd Hardware Company, Richmond, Vt., and the business will hereafter be carried on by F. H. Edwards under the style of the Edwards Hardware Company. Mr. Edwards would appreciate copies of price-lists, catalogues, &c., relating to Shelf and Heavy Hardware, Stoves, Tinware, Sporting Goods and Agricultural Implements, which he handles both wholesale and retail.

FOURTEENTH ANNUAL BANQUET

OF THE

Hardware Merchants' and Manufacturers' Association of Philadelphia.

ONE HUNDRED AND FIFTY covers were laid at the Continental Hotel, Philadelphia, where the Hardware Merchants' and Manufacturers' Association held its annual banquet on January 25. The banquet hall was beautifully decorated, and on the tables were handsome souvenirs of Hardware specialties presented by such firms as the Enterprise Mfg. Company, G. & H. Barnett Company, McCaffrey File Company, North Bros. Mfg. Company and others, that gave a fair idea of the city's growth in the manufacture of Hardware goods. The menu was of special excellence and the dinner was thoroughly enjoyed.

James H. Ritter, retiring president, called the company to order in a very able and interesting address.

Upon assuming the presidency, Hugh McCaffrey, the new president, in choice words briefly reviewed the history of the association and its struggles to open up foreign trade. He attributed the wonderful success in this particular to the excellence of the goods which are manufactured in the Philadelphia workshops, and to the educational facilities of the Franklin Institute and the Manual Training Schools, in which, he said, "may be found the sources of its future mechanics and skilled manufacturers who are to upbuild and increase its interests."

President Hugh McCaffrey acted as toastmaster, and the formal speaking was alternated with some fine singing.

In toasting "Our City, Its Growing Commercial Importance," Mayor Ashbridge spoke of the progress that Philadelphia has made within the last half decade, and especially the large trade that has been established with foreign countries. Other speakers pointed out Philadelphia's capabilities for expansion and future growth.

Alfred C. Rex, in his usual humorous vein, spoke on "Expansion," after which William C. Peters made an interesting address on "Retrospection," in which he read from an invoice dated in the early forties, showing the class of goods and prices then ruling, which the house (Dilworth, Vance & Co.) imported at that time. Further on he read from an invoice dated 1790, and still later from one dated 1777, thus showing that the present firm of Jas. M. Vance & Co. can trace a continuous record to that date.

Chas. Z. Tryon spoke on "Prosperity," and fully pointed out the city's past and future possibilities.

T. J. Fernley, the genial secretary and treasurer of the association, in his usual happy vein made an address sparkling with wit and repartee, winding up by presenting to the retiring president a very handsome gavel, the head of which was made from wood taken from the battle ship Maine, and bound with gold, on which was engraved the following inscription:

"Presented to
Jas. H. Ritter, President
Hardware Merchants' and Manufacturers' Association,
January 25, 1900."

At the conclusion of the regular toast list, brief addresses were made by George H. Sargent, president of the Hardware Club of New York; H. B. Lupton of the American Steel & Wire Company, and R. R. Williams, Hardware Editor of *The Iron Age*. Mr. Lupton's address, which was listened to with close attention, is as follows:

Henry B. Lupton's Address.

I esteem it a great honor to be invited to join with you this evening, and please accept my thanks.

Your chairman has announced that I would have something to say as to trusts. If I may be permitted to correct him, I will say "so-called trusts." A few months ago a prominent St. Louis lawyer, Mr. Lockwood, published a pamphlet entitled "Apprehension *vs.* Progress." In it he says, "Trusts," so-called, are merely exemplifications of an industrial tendency, so universal, so ancient and constant, that it might be called the law of commerce They may be defined as efforts to accomplish with lesser expenditure what has heretofore required a greater. That is the foundation of all mechanical improvement, and in principle, at least, is worthy of commendation. All mechanical advancement has been met by the most bitter opposition.

In the seventeenth century the iron furnaces of England used charcoal alone for smelting the ores. In 1619 the son of the Earl of Dudley succeeded in smelting by coal and coke. His competitors had his patent revoked and his furnaces were destroyed by the charcoal burners as they felt it would lose them the chance of engaging in the occupation they best understood.

The first saw mill was erected in England in 1663 by some Hollanders. It had to be abandoned because of the hostility of hand sawyers, who thought they would be thrown out of work by this saving of labor, and it was nearly a century before another saw mill was erected in England.

When Flemish weavers brought their improved methods into England the home weavers petitioned the King against the newcomers.

A hundred and fifty years later Kay, Hargreaves and Arkwright had to flee for their lives. In every case the opposition and violence were caused by the fear that the inventions would throw out of employment those who could work only under old conditions. There is no measuring the extent to which this apprehensive sympathy with labor will go.

Sir Wm. Beechy wrote to members of a society formed for the study of photography, begging them to desist in their experiments, for if they succeeded in their efforts it would ruin the portrait painters.

At all times and in all countries there are those who prefer existing conditions and want nothing new.

Carroll D. Wright said: "In those countries where machinery has been developed to the highest, the greatest number of work people are engaged, and in those countries where machinery has been developed to little or no purpose, poverty reigns and ignorance is the prevailing condition."

In the earlier period of our country's life it was natural that the energies of our people should have been applied to the development of our resources, the establishment of inland communication, the building of our cities and towns and the founding of manufacturing industries. American commerce was first colonial, then national and is now international.

Walt Whitman says: "It is provided in the essence of things that from any fruition of success, no matter what, shall come forth something to make a greater struggle necessary."

Changed business conditions make necessary changed business methods. This change in business methods has taken on the phase of great industrial combinations, Napoleonic in their conception, stupendous in their magnitude.

There may be individual cases in which these altered relations have worked hardships, but I cannot but feel that they bring the greatest good to the greatest number.

George T. Oliver, in his able article in the *Forum*, says: "The question of industrial combinations is probably the most absorbing one before the American people to-day. It is worthy of the careful study of every patriotic citizen, of the earnest, vigorous efforts of our wisest statesmen, and not to become the plaything of empirics, or the tool of the political charlatans, who are prepared to denounce rather than discuss whatever may not at first be thought popular."

Permanent consolidation of interests by an open merger is the only perfect combination. One of these aggregations thoroughly organized and ably managed can go a long way toward making its position impregnable and holding it in perpetuity. Able, conservative and far sighted managers will dictate a policy that will disarm public criticism, as well as discourage private competition.

All that science can devise or invent is quickly taken

advantage of, and the records of the Patent Office will show that most of the great inventions are now owned by corporations.

When a merger is effected the managers are able to compare past records of the various plants, and it is invariably found that some have been manufacturing at a much less cost than others.

Under the new *régime* all this is at once changed and the best and most successful methods and mill and factory practices are introduced in all, thus turning out their product at the maximum of product to the minimum of cost, which is the perfection of manufacturing.

Is not a business so conducted and so managed as legitimate as it was when each mill and factory worked in its individual capacity? The legislatures of several States have tried to regulate these combinations. The State of Illinois has passed laws that are particularly drastic in the nature of their provisions, but no law can be continuously enforced which makes a crime of that which the average every day common sense of the American people does not consider as criminal.

The *menu* was tastefully gotten up, and among the popular songs contained in it was the following original song from the pen of James H. Ritter, the retiring president of the association:

Song of the Hardwareman.

Gay to-night are our faces,
Gayer the hearts within;
For we've cast off the traces
Of trade and rush and din.

Chorus.

Sing, sing together,
With voices and hearts in tune;
Sing, sing together,
For our cares return too soon.

To Hardware we are devoted,
And our talk is of Locks and Nails;
But still our thoughts as noted
Outrun our books and sales.
Chorus.

With discounts we've much to do—
Five tens and ninety are fine:
But most when that dear little two
Appears at the end of the line.
Chorus.

What though the years are flying,
And sprinkling our heads with gray;
Our hearts hold youth undying,
So we'll be boys while we may.
Chorus.

Warrant on Pocket Knives.

THE American manufacturers of Pocket Cutlery have been considering the subject of warrant on the goods, and at a meeting held this week took united action in adopting the following warrant, which, it is intimated, they will strictly adhere to:

We warrant our Pocket Knives only against flaws in blades and springs. Knives that are much worn or that have been reground by dealers or consumers, or that have more than one blade broken, will not be subject to return or exchange.

The manufacturers uniting in this action are the following:

New York Knife Company.
Miller Bros. Cutlery Company.
American Shear & Knife Company.
Excelsior Knife Company.
Cattaraugus Cutlery Company.
Holly Mfg. Company.
Valley Forge Cutlery Company.
Robeson Cutlery Company.
Ulster Knife Company.
Jackson Knife & Shear Company.
C. Platt's Sons.
Walden Knife Company.
Southington Cutlery Company.
Northfield Knife Company.
Humason & Beckley Mfg. Company.
Empire Knife Company.
Phœnix Knife Company.
Challenge Cutlery Company.
Carrier Knife Company.
Camillus Knife Company.
Thomaston Knife Company.
Booth Bros. Cutlery Company.

Trade Items.

THE trade will observe the page advertisement in this issue of the Deming Company, Salem, Ohio, manufacturers of Pumps and Hydraulic Machinery. The company report a large volume of business transacted last season and an increase in output for the coming one. They advise us that their export trade is rapidly growing.

A. C. WILLIAMS, Ravenna, Ohio, manufacturer of Sad Irons, House Furnishing Specialties and Hardware, has during the past year erected an addition to his plant, enabling him to greatly increase his output for the present season. Mr. Williams advises us that he made and sold 1,000,000 Sad Irons in 1896, 1,258,000 in 1897 and 1,580,000 in 1898. This year the number will reach 2,000,000. These Irons are made in 44 styles and 53 sizes. In this connection the manufacturer's faur-page advertisement in this issue will be noted with interest.

JOSEPH H. WILLIAMS has become a member of the old and well-known firm of Burditt & Williams, Boston, dating from February 1.

CONTENTS.

Trade Winning Methods.

This department will contain a description of approved methods of bringing customers to the store by means of newspaper advertising, circulars and such special expedients and methods as are found useful by enterprising and progressive Hardwaremen.

A cordial invitation is extended to merchants to co-operate in the effort to make it suggestive and of practical use to the trade.

SURMOUNTING TRADE BARRIERS.

A. M. Matthews & Co., who handle Coal, Grain, Lumber, Paints and Hardware at Orange Valley, N. J., are peculiarly situated as to trade environments.

COMPETITION.—They are only 5 miles from Newark, N. J., and 13 miles from New York City. They thus come into direct competition with the department stores located in the cities named.

CUSTOMERS.—Their trade is divided into two classes, the well to do residential class, the male portion of which go daily to either of the two cities mentioned to business; the other class being factory operatives (the district being a manufacturing one), largely foreigners and mostly very poor. Between these extremes is a sprinkling of small business proprietors. These conditions necessitate the keeping of two or more grades of goods to meet all demands.

NEWSPAPER ADVERTISING.—Owing to the ignorance of the laboring class, very few of whom can read, and the small number of the better class who read the local newspapers, very little newspaper advertising is done by the concern. When any is done it is at special times, when large cuts are used, with block type, &c.

A Page from A. M. Matthews & Co.'s Illustrated Circulars.

Attracting Trade.

To reach the desirable class of customers illustrated circulars are issued periodically. These circulars have four pages 7⅛ x 9 inches in size, usually with the heading "SEASONABLE GOODS" at the top of the first page.

THE ARRANGEMENT.—A description of one circular, with the aid of the accompanying reproduction of a page, will illustrate the methods pursued. Cuts are used liberally, with large display type and sufficient white space to permit a page being taken in at a glance. The circular under consideration illustrates Skates, Coffee Mills, Mrs. Potts' Sad Irons, Nut Cracker, Meat Chopper, Lantern, Coal Sifter, Razor Strop, a pair of Button Hole Scissors and a Pocket Knife, one cut appearing on the first page, three on the second, four on the third and two on the last page. In most instances a price or a range of prices is given, accompanied by the name of the article and a word or two regarding its use, quality and desirability.

WITHOUT CUTS.—In addition to this matter attention is called without cuts to Snow Shovels, goods suitable for Christmas presents, Carpenters' Tools, Coal, Grain and Lumber. The name of the concern appears at the bottom of the first and last pages.

Distribution of Circulars.

REGULAR CUSTOMERS.—The concern have about 700 charge accounts on their books, and they mail circulars to these and to a selected list besides. Others are given to newsdealers, who place them inside of the New York papers sold or delivered to residents.

PERSONAL WORK.—The circulars are also handed out with goods over the counter and by their salesmen to customers on their routes. The concern do not believe in having printed matter thrown in at houses by boys, as they consider it a waste of good paper.

Show Windows.

The firm, however, consider their show windows their best advertising medium. They have about 35 feet of front show window space, divided into four sections.

FREQUENT CHANGE.—The goods are changed in the windows at least every two weeks. Price cards and fixtures of various shapes are used; in short, everything is done to catch and hold the attention of passersby and prospective customers.

C. H. CASEY'S ADVERTISING METHODS.

C. H. Casey of Jordan, Minn., has been a constant advertiser since first entering into business and to this he attributes much of his success.

A VARIETY.—The methods employed take a variety of forms, newspaper advertising, as the most satisfactory and successful, receiving the most thought and attention. This is brought to the attention of the public through the medium of the weekly paper. In 1898 he changed his advertisement 42 times and was so well pleased with the result that on January 1, 1899, he resolved to change it each week, and this has been his practice up to the present time.

WRITING ADVERTISEMENTS.—He endeavors to have each advertisement in striking contrast to the previous one They are drafted in such a manner that the printer has a very fair idea of the manner in which they are to be set. A proof is always required before the ad. is printed in the paper.

COLORS USED.—Proofs of advertisements received by us show that colors are used with good effect. One covering a 9 x 23 inch space, including 14 cuts, is all printed in red ink. The other, 11 x 13 inches in size, has five cuts in red and the reading matter in black. Black ink is used exclusively in a third advertisement, 6 x 7 inches, devoted to the illustration, price and description of a Heating Stove.

EXPENSIVE, BUT BEST.—Colors are considered the best

for newspaper advertising, though expensive. Space is engaged on a prominent page, so that each person that picks up the paper is sure to see the advertisement and probably read it carefully.

ELECTROTYPES.—Practically all the electrotypes that are used have been obtained from manufacturers, who as a rule are glad to furnish them to dealers who will use them to advantage.

STORING CUTS.—Attention has been given to keeping these cuts in such a way that they will be easily accessible. A collection of 194 of what are called live cuts has been catalogued, besides some 60 or 70 that are out of date. Each cut is numbered as received and entered in a book under its number. This is found a convenient plan for keeping them and an aid when writing advertisements.

Booklets.

A booklet the size of a business envelope, containing 35 pages, has recently been issued. Almost every page shows an illustration of the goods referred to, of which there is a great variety. The printing is in red and black and the entire book is attractive in appearance. We reproduce the page devoted to Builders' Hardware to give an idea of the pleasing way in which the matter is presented. The heading, "Builders' Hardware," is in red:

BUILDERS' HARDWARE.

On this we are again right in our element. We like it and have spent considerable time studying it. We will be glad to explain to you the workings of the different articles in this line, or give you any other information you may desire. While we maintain it poor policy for the owner of the building to purchase his Hardware in one lump (as it were) from the dealer who gives him the lowest bid, as he invariably gets the poorest "trash" the market affords, yet if you wish to buy that way don't fail to see us, as we will give you the best for the money. We carry a very fine line of Locks, Parlor Door Hangers, Night Latches, Butts, &c., for dwellings; and Hinges, Hangers, Rollers and Hay Fork Outfits for barns or granaries. Space does not permit or we would tell you of the many specialties which you can get only of us. We are too busy running up ourselves to run down our neighbors, and let our Builders' Hardware speak for itself if you will call and see it.

C. H. CASEY, Jordan, Minn.

On each page, except those forming the covers, the name and address of the proprietor appear.

DISTRIBUTING.—A copy of the booklet was mailed to every resident within the territory tributary to the town. It is believed that this kind of direct advertising, coupled with constant newspaper announcements, is productive of valuable results. The idea followed is, that what is worth doing is worth doing well, in advertising as in other things; and making advertising matter so attractive that people will look it over, read it and perhaps preserve it simply because it is unique and attractive.

A Mailing List.

A mailing list compiled from personal acquaintance and with the assistance of the local editor's subscription list has been corrected and revised each year, until a complete list in convenient form is now at hand of every purchaser of merchandise that makes Jordan a purchasing place of either little or much.

MAILING.—In the distribution of all special advertising matter, such as booklets, &c., it has been found advisable to use the mails instead of handing the matter over the counter as is so often done by dealers, as mailed matter reaches the destination quicker and in better shape, while customers appreciate it much more than they otherwise would.

CIRCULARS, &C.—Circulars and printed matter from manufacturers and jobbers are made up into packages and are wrapped up with goods as they go out, after having the name and address of the merchant stamped upon them. These are not considered very good advertising, but it is inexpensive.

ENVELOPES.—Stereotyped methods of presenting ideas are avoided in all printed matter. In the upper left hand corner of envelopes used for correspondence the following is printed:

About Our Business and Ourselves.
C. H. CASEY,
Jordan, Minn.

On large envelopes used for mailing printed matter is printed across the top these words:

THIS ENVELOP CONTAINS MATTER OF INTEREST TO YOU.

This is followed by an illustration of a Cook Stove and a request to hand the contents to a neighbor when read by the one receiving it. Enough space for the address only is left blank.

RECEIPTS even are made an advertising medium. Across the end, next the stub, attention is called to various lines of goods in small but distinct type. A picture of a Plow and also a Razor is printed in red in the body of the receipt. An emphatic "I THANK YOU" precedes the line upon which the merchant's name is to be written. Under this is an invitation to call when in need of anything in his line. These unusual additions to the receipt do not mar its appearance, nor are they obtrusive.

MADE TO COUNT.—These instances indicate how every piece of printed matter is made to carry some additional message and thus add to its utility.

Blotters and Pictures.

In the autumn a quantity of blotters are printed of a size to fit a regular 6¼ size envelope. These are sent out with statements and letters to customers, and also mailed to a number of school teachers in the different districts about the county.

COLORED PICTURES, with name and business printed on, are usually sent out about July 1 and art calendars January 1. A great many persons are under the impression that those things cost the dealer little or nothing and their appreciation of them is in proportion. In mailing the pictures and calendars a

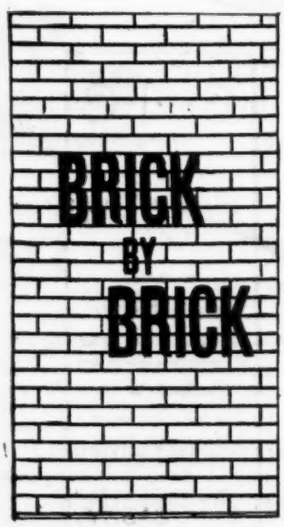


Fig. 1.—Front Page of Folder (Reduced).

letter is inclosed calling attention to some feature of the inclosure that is likely to interest the recipient, and incidentally the cost of getting them out is mentioned.

A FOLDER.—Fig. 1 represents the front page of a folder entitled "Brick by Brick," which was sent out with 1900 calendars. The folder was printed in black ink on heavy tinted paper, the back page showing a continuation of the brick work, as on the front page. In the left hand lower corner of the back page was a blank circle

1½ inches in diameter, in which was printed in colored ink the following:

C. H. CASEY,
HARDWARE
JORDAN, MINN.

GROWTH.—The two inside pages contained the following address to the trade, which is given in reduced form, the type page of the circular being about 2¼ x 4½ inches:

BRICK BY BRICK.

WE have built up our business, from a very humble beginning, nearly seven years ago, until now we can say without fear of contradiction that we carry at all seasons of the year one of the largest, best assorted and best kept stocks of HARDWARE and FARM MACHINERY, with their kindred lines to be found in Scott or adjoining counties

We have studied the interests of our patrons unceasingly, and have mastered every detail of the business. We have spared neither work nor money when the object in view was the bettering our position to serve our customers. This in part accounts for our success We have ever tried to accommodate and oblige the public, as a consequence we number among our constant and steady visitors the same familiar faces that were seen when we started.

OUR prices we absolutely guarantee to be as low, if not lower, than those of our competitors, on like quality of goods We aim to have our word as our bond, there will be no quibbling or questions asked on guaranteed goods you got of us, which proved defective. If you are a customer you know this; if you are not give us the chance to demonstrate it to you

While on this subject, let me ask, if you are not a customer WHY are you not? Is it for any reason for which we are to blame? If so and you will give us a hint we will gladly and willingly make correction If it is because you feel under obligations to some other dealer in our line let us have a share of your trade. We feel confident that a trial will lead to further business, to our mutual advantage.

When next in Jordan drop in and visit with us. If we can be of service, whether in the line of trade or otherwise, we shall be pleased

Most Respectfully Yours,
C. H. CASEY.
JORDAN, MINN.

SMALL THINGS.—The portion of the family with sporting proclivities as well as those of a domestic turn of mind are not allowed to forget that C. H. Casey puts up a fine quality of Lubricating Oil and that he can supply

TRADE
C-H-C
MARK
CYCLE
LUBRICATING
OIL.
GUARANTEED
PURE SPERM
For Bicycles, Sewing Machines, Guns, Revolvers, etc.
PUT UP ONLY BY—
C. H. CASEY,
—DEALER IN
HARDWARE,
BICYCLES,
FARM IMPL'S.
JORDAN, MINN.

Fig. 2.—Label Used on Bottles of Oil.

their wants in other directions as well. In Fig. 2 is shown the label which is used on Bicycle and Sewing Machine Oil.

Stationery.

The belief is expressed that it pays to have all office stationery, cards, &c., of the best quality, printed in a neat and tasty manner. The rubber stamp, while a very good thing in its proper place, if used instead of the job press will soon give a merchant a reputation for cheapness that is certainly unenviable.

Fence Signs

are also used, and water proof Oil Cloth signs, tacking the latter on fences, trees and barns along the public roads.

INDUCEMENTS.—It has been found that a very good way to preserve large Oil Cloth signs is to obtain the consent of a farmer to use the side of his barn, and then to offer him some inducement in the way of special prices on anything he may need in the Hardware line to see that

Fig. 3.—Fence Signs.

they are not mutilated or destroyed. Fig. 3 gives an idea of the character of fence signs used, which are made attractive by the rural scenes depicted upon them.

HIRES IT DONE.—Mr. Casey has never attempted to write or paint his own fence signs—in fact, he is not an enthusiastic admirer of signs gotten up in that manner, as they are apt to look cheap and show the ear marks of an amateur, which he does not think consistent with good advertising.

LARGE SIGNS.—Oil Cloth signs 6 feet square, painted in colors with an attractive picture, have been found the most effective of any. These are nailed on the sides of barns or granaries prominently located, where they remain for years, while signs fastened to fences and trees will be demolished in a short time.

A MODEL KITCHEN EXHIBIT.

One of the annual features of Morristown, Tenn., is a chrysanthemum show, and at the last show, held recently, Geo. E. Speck & Son, Hardware merchants, carried out an advertising scheme which they advise us proved a grand success. It took the form of what they describe as a "Model Kitchen."

ATTRACTIONS.—A steel Range with trimmings, free coffee and wafers and a lamp to be given to the most popular young lady of the town were some of the special and attractive features connected with the display. The firm describe the exhibit in the following letter:

SPACE.—We proposed to give the ladies a fair price for a floor space in the center of their flowers and to try and make it as attractive as any other part of their display.

BOOTH ARRANGEMENT.—We first constructed a booth of pink and blue cheesecloth, putting first one width of blue and then one of pink, making a very pleasing effect. We then put in the center the best steel Range on our floor and marked it at special price, $37.50, with 52 pieces of trimmings, instead of $40 untrimmed. We trimmed the side walls with all the convenient attractive goods for the kitchen and marked all at special prices for the occasion. Over and above all the display we hung a portarit of our father as founder of our firm.

SERVING COFFEE.—We then put in a small Gasoline Stove and purchased from one of our wholesale grocerymen the finest parched coffee we could obtain. This we served to every one free in small after dinner Coffee Cups with wafers, and in the course of two days we served about 1800 cups of coffee. On each Saucer was placed a card printed in neat style.

GIVING AND TAKING.—The junior member of our firm was to be seen in the model kitchen dressed in a waiter's white coat and white apron, serving coffee, and one of our salesmen showing goods and taking orders for goods to be delivered later.

APPRECIATION.—To say our display was a success will not express it. Every one talked of Speck's model kitchen during the display. "Go get some of that coffee if you want something fine," was frequently heard. We have since enjoyed seeing the ladies flock into our store and have received several notes complimenting our display.

A PRIZE LAMP.—We also gave the ladies an $8 Lamp to be put up and voted on for the most popular young lady of the town. The Lamp created no little excitement and when the proceeds of the election were counted they had $42.70 for their Lamp. This also proved a drawing card for our house.

ADVERTISING.—We certainly believe in advertising through the columns of the newspapers, through the show window, in the store and in several other ways to keep one's name before the public. "Let them know where you stay and they will generally come to see you," is the motto we go by.

Cattaraugus Cutlery Company's Banquet.

THE CATTARAUGUS CUTLERY COMPANY, Little Valley, N. Y., tendered their annual banquet to employees on the evening of the 9th ult. This annual festivity is looked forward to with a great deal of pleasure, not only by the employees of the company but also by the people of Little Valley in general. Over 250 persons, all of them with two or three exceptions identified with the business, were present at the banquet, and the occasion was thoroughly enjoyed by all. The opera house, where the banquet was given, was beautifully decorated with ferns and huge American flags, which were effectively set off by numerous electric lights. In their two-page advertisement in this issue the company give two views of the banquet hall, showing the four tables and the guests at each. During the banquet a fine orchestra supplied music, and their selections were frequently and heartily applauded.

After the last course had been served the toastmaster of the evening, Tint Champlin, secretary of the company, made a few well chosen remarks, after which he called upon J. B. F. Champlin, president, for a speech. Mr. Champlin, who was loudly cheered when he arose to speak, said that the occasion gave him great pleasure and that he highly appreciated the efforts of his employees to make the business the success it is. His allusion to the good times and the present administration drew out applause. Mr. Champlin is a man of strong personality and high executive ability, and has succeeded in building up a business that entitles the company to a prominent place in the Cutlery trade of the United States. In this he has been ably assisted by his son, Tint Champlin, and A. E. Darrow.

Mr. Champlin's address was followed by others from Claude L. Wilson, J. M. Hanford of Buffalo (who is referred to as the Dr. Depew of the company's travelers), H. P. Corwith of Rockford, Ill.; W. A. Dunn of San Francisco, and A. F. Kelley of Boston. Mr. Kelley said that he had never been able to understand the excellence of Cattaraugus Cutlery until he entered the hall that evening and noted the friendly relations existing between employer and employee, which he said would produce good goods of any kind when coupled with the intelligence and "higher education" apparent on every hand.

Elmer Kelley, one of the oldest travelers in the employ of the company, followed, and then William Bushnell, foreman of the factory, related some early reminiscences of the business which were amusing, and gave an insight into some of its ins and outs. Mr. Cooper, the Western sales agent from Missouri, spoke on "The Demands of the Western Merchant," and H. J. Crissey, a stockholder in the company, made the closing address.

After the speeches the young people enjoyed a dance, and this terminated what was voted an exceptionally elaborate and enjoyable occasion.

Sewing Machines in the Hardware Trade.

THE sewing machine line is a branch of business which is attracting the increasing attention of the Hardware trade, and it is not going too far to state that no other special line now under consideration by the trade has proved more satisfactory and successful with those who have taken it up vigorously. Much has been written and more has been said, and while many were skeptical, others have taken hold of the proposition and have met with success, so that to-day the Sewing Machine is recognized substantially as a part of the Hardware business, both by the jobber and retailer. This state of affairs has brought about a great change in the Sewing Machine trade itself, and the change is admitted to be very beneficial both to the trade and the public.

It is the purpose of the present article to lay before our readers some information regarding the National Sewing Machine Company, of Belvidere, Ill., who have made a specialty of marketing their goods through the Hardware trade for several years, and have reaped liberally of the harvest which an aggressive and progressive pioneer in any line usually reaps. As a result of manufacturing first-class goods and embodying in their product the latest and best ideas, they stand in close business relations with the Hardware trade, and have built up a splendid Sewing Machine manufacturing plant. To give some idea of the volume of their business we mention a few statistics regarding their plant:

Acres of ground covered	10.25
" " floor space	8.50
Aggregate horse-power employed	1,500
Feet of railroad sidings	1,980
" " line shaftings	5,415
Private gas plant capacity, cubic feet per day	180,000
Dynamos and motors in use	17
Automatic machines in use	182
Semi-automatic machines in use	134
Milling machines in use	139
Drilling " " "	118
Grinding and polishing machines in use	162
Molding machines in use	21
Special machines in use	165
Miscellaneous machines in use	153
Presses	41

In other words, they have a total installation of 1050 pieces of machinery, which, together with a force of 1925 employees, turn out a product averaging 1000 complete sewing machines per day. When it is remembered that substantially all of these machines are sold through the medium of the Hardware trade, there is little room for doubt in a Hardware dealer's mind whether the Sewing Machine trade is a good thing for him or not.

It will also be a matter of interest, as showing what it means to produce 1000 Sewing Machines a day, to state that each complete machine, including attachments, is built up of an average number of 468 pieces; thus there are 468,000 separate and distinct pieces to be made and finished every working day, and many of these pieces pass through the hands of several workmen. This is at the rate of 780 parts to be made and finished per minute.

The product of this factory is altogether family Sewing Machines, and the line manufactured embraces various patterns of medium and high grade goods, and covers the entire Sewing Machine field outside of heavy manufacturing.

Nicholson File Company Purchase Another Plant.

THE NICHOLSON FILE COMPAY, Providence, R. I., have purchased the plant of the Eagle File Company, formerly the Madden & Cockayne File Company, Middletown, N. Y. The purchase has been under negotiation since January 1, and was consummated on the 18th. All the real estate, plant, machinery, good will, stock of goods, &c., has been transferred, and the Nicholson Company will continue the business, assuming all unfilled orders, and to them all accounts due the Eagle Company will be payable. All accounts against the Eagle Company contracted since December 31, 1899, will be paid by the new owners, all contracted on or before that date being paid by F. M. Madden, at Middletown.

In a circular relating to the matter Nicholson File Company state that they will continue the manufacture of the old and well-known Eagle brand of Files, and assure the trade who are now selling these goods, and the consumers who are using them, that their qualities shall not diminish under their care. They solicit the continued patronage of all those who have handled Eagle Files, and promise that their business will receive prompt, careful and courteous attention. All invoices will hereafter be made out by this company, and all unsettled accounts due the Eagle File Company should be remitted to the Nicholson File Company, Providence, R. I.

Among the Hardware Trade.

Harlan & Rollins have succeeded L. L. Dana in the retail Hardware, Stove, Agricultural Implement and Sporting Goods business, Neponset, Ill.

The Hardware store of Chandler & Engel, Dundee, Mich., was damaged by fire on the 5th ult.

The large increase in their business has made it necessary for the Wyeth Hardware & Mfg. Company, St. Joseph, Mo., for the second time within a year, to enlarge their establishment. They are now engaged in erecting a new building a portion of which will be devoted to their stock of Stoves and Ranges, of which they carry a very complete line as Western distributers of a Memphis concern.

William Collard, Pelouse, Wash., is moving his Shelf and Heavy Hardware and Furniture stock into new and more commodious quarters.

Orin Dudley has purchased an interest in the Hardware business of Dudley & Co., Toledo, Ohio.

Geo. W. Young, Center, Mo., has admitted a partner in his Hardware, Stove, Farm Implement, Sporting Goods and Vehicle business, and the style is now Young & Hitch.

S. A. Gregg has succeeded J. T. Gregg, West Jefferson, Ohio, in the Hardware, Stove, Tinware and Agricultural Implement business. Mr. Gregg discounts all bills.

A. Watkinson is successor to E. H. Watkinson in the retail Stove and Hardware business at Corning, Cal.

The store of E. M. Swope, Petersburg, Pa., was robbed of $100 worth of goods on the night of the 13th ult. The four burglars were subsequently arrested and are now in the county jail awaiting trial. Most of the goods were recovered.

Alexander & Elder have purchased the Hardware, Farm Implement and general stock of John Brinley, Dry River, Pa.

Cumberland Hardware Company, Cumberland, Md., have purchased the business of A. D. Ladew and have removed the stock to their store. The company will move about April 1 to new quarters, which will be equipped with the latest improvements in shelving, showcases, counters, &c.

E. S. Weeks has succeeded J. L. Obendorf in the Stove and Mining Tool business at Randsburg, Cal.

The store of J. H. Faunce at Cortland, Ohio, was recently robbed of $200 worth of Razors, Pocket Cutlery, Guns and Ammunition.

J. P. McDermott & Co., Rock Springs, Wyo., dealers in Hardware, timber, &c., are now carrying a full line of general merchandise.

Nicholson & Fay, Belmont, N. Y., have bought the Hardware stock of Corbin & Bates. They will occupy the store vacated by the latter firm as a Carriage repository.

The store of San Jacinto Hardware Company, San Jacinto, Cal., suffered damage to the extent of $250 from a recent earthquake. The building has, however, been repaired and also enlarged.

Geo. F. Gardner has purchased the Hardware business of F. B. French at Hillsdale, Mich. Mr. Gardner will close out as much of the stock as possible and remove the remainder to his own store. Mr. Gardner has been identified with the Hardware business at Hillsdale for more than 20 years.

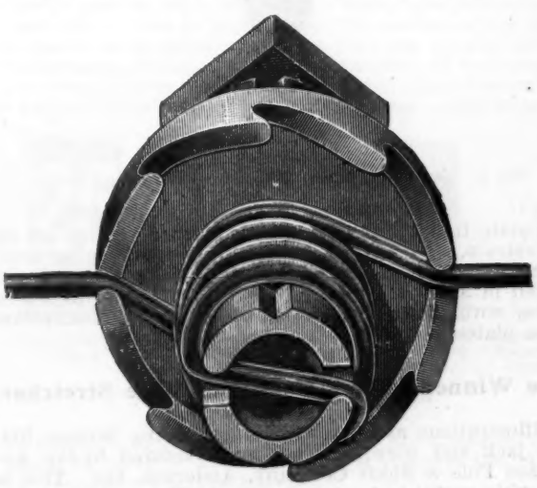
Joseph Wild has bought the Hardware, Stove, Agricultural Implement and Sporting Goods business of Swenson & Anderson, Lafayette, Minn.

C. L. Heath has purchased the business of C. C. Heath, Corpus Christi, Texas. Mr. Heath will continue the wholesale and retail Stove, Tinware, Oil, Paint and Ship Chandlery business at the old stand. A specialty will be made of guttering, roofing and all kinds of job work.

J. M. Berry, formerly secretary of the Pacific Retail Hardware Association, has disposed of his interest in the Hampton Hardware Company, Marysville, Cal., and is now connected with the San Francisco house of the Deere Implement Company.

The Dewey Center Wire Stretcher.

The accompanying illustration represents a wire stretcher or ratchet put on the market by the Fulton



The Dewey Center Wire Stretcher.

Supply Company, Wauseon, Ohio. The shaft of the stretcher is hollow, allowing a rod 1 foot long to be inserted at the wrench end. It is explained that this keeps

the stretcher square with the wire, and prevents side draft when stretching the wire. The stretcher is designed to be put on the wire at any point, after which it is turned by the aid of the wrench. The manufacturers state that with this stretcher it is unnecessary to bore posts, that the stretchers do not break and that they do not cut the wire.

The Twentieth Century Sheet Steel Sash Pulley.

The Empire Forge Company, Lansingsburg, N. Y., are offering the sheet steel sash pulley shown herewith. In Fig. 1 are shown the pulley complete, the wheel with reinforced bearings and the mortise in window frame. In Fig. 2 the construction of the wheel is

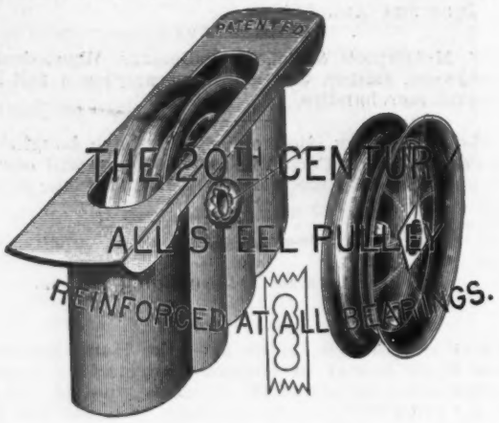


Fig. 1.—The Twentieth Century Sheet Steel Sash Pulleys.

illustrated. The wheel disks are riveted together to prevent them splitting open, and the rims of the wheels are reverted to prevent them cutting the sash cord. All axle bearings in the cases and wheels have patented reinforcements. It is pointed out that the cases have solid ends, making them as strong and durable as cast iron pulleys, also that the ends of the face plates enter the wood, holding them as securely as screws would. The case has deep housing, which, it is explained, keeps the rope from jumping off the wheel. The manufacturers state that the pulleys fit the mortises, taking off all the strain, and that the cases cannot buckle or bend back. The pulleys are packed in paper boxes, and 100 dozen in a wooden case. They are furnished in 2-inch sizes, with plain face plates, also with brass or nickel face plates.

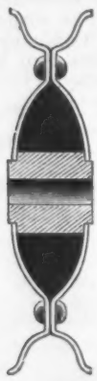


Fig. 2.—Sectional View of Twentieth Century Sash Pulley.

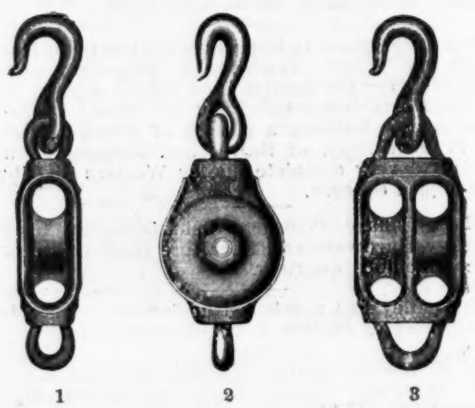
The Winner Lifting Jack and Wire Stretcher.

Illustrations are herewith given of the Winner lifting jack and wire stretcher, manufactured by the Anderson Pole & Shaft Company, Anderson, Ind. This is a doubly useful and convenient tool. It is a lifting jack, for the purposes for which such an article is made, with an attachable clamp, enabling it to be used as a wire stretcher. The wire is fastened in the clamp, which is shown both separate and attached. The step of the jack which supports the load in lifting is placed against a fence post. The top ring is then held up with the thumb or finger, and the lever is at the same time worked with the other hand. The stretcher can be attached or removed very quickly. The lifting jack itself has special and valuable points. The lifter can be raised or lowered to any point on the standard, and wherever it is stopped it becomes instantly locked. It is again instantly loosened by raising the lever to an upright position. A full throw of the lever will raise the load about 2 inches, or it may be raised gradually the full hight by working the lever up and down like a pump handle.

The Winner Lifting Jack and Wire Stretcher.

Star Pattern Malleable Iron Block.

The Boston & Lockport Block Company, Boston, Mass., are putting on the market the iron block shown in the accompanying illustrations. The sheave bearing is alone at the hub, the rim running clear. It is pointed out that by this means the friction is greatly reduced and the edge of the sheave kept from wearing sharp, thus preventing any cutting of the rope. The edges of the block are so rounded that any wear of the rope at this point is said to be impossible. It is explained that the whole construction of the block is such that it is light, strong and handsome and still very simple, while it embodies many points of advantage not found in other blocks. The sheaves or attachments can be easily changed, as the whole block is securely locked together by a single bolt, which also acts as the sheave pin. The block is referred to as being admirably adapted for any work where light and compact blocks are required, such as telephone and telegraph line work and also electric light and power lines. The manufacturers state that the 2-inch block could sustain a load of 500 pounds with an even strain, while its weight is but 6 ounces. They do not, however, recommend them for 500 pounds. The blocks run in sizes from 2 to 8 inches inclusive. The patent for the blocks bears date December 12, 1899.



Star Pattern Malleable Iron Block.

The Heidt & Hubbard Safety Sash Lock.

Heidt, Hubbard & Co., Bay Shore, Long Island, N. Y., are offering the safety sash lock here shown. The construction of the device is such that in use it is set in the window frame on either side opposite the sash and entirely out of sight. It consists of few parts and is referred to as being automatic in action. Fig. 1 represents a single lever lock for bottom sash without balance,

Fig. 1.—The Heidt & Hubbard Safety Sash Lock.

Fig. 2.—Double Lever Lock for Use where Both Sash are Balanced.

while Fig. 2 shows a double lever lock where both sashes are balanced. The manner in which the parts are applied is shown in Fig. 3, where two single lever locks are represented as applied to both sash without balance, one of the sash being removed for the purpose of more clearly showing the position of the locks. In operating the device the key passes through a cam, which presses the lever against the corrugated steel rack on the window sash. The manufacturers state that any person who can mortise a hole in the window jamb can put the lock in place. For purposes of ventilation one or both sash may be placed in any desired position and securely locked, as they cannot be moved up or down

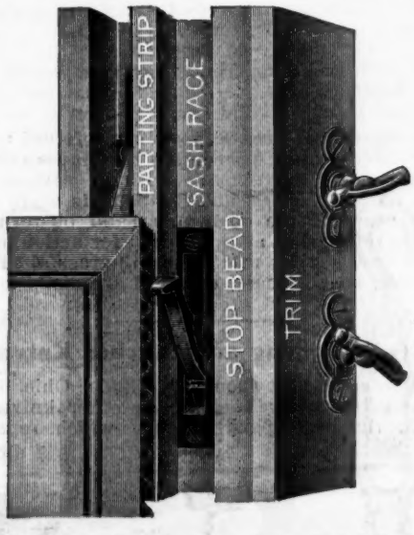


Fig. 3.—Two Single Lever Locks Applied to Sash without Balance.

without using the key. The lock also has a cut off which keeps the lever away from the sash when so desired for painting, repairing, cleaning windows, &c. The key, it is claimed, will operate the lever to any desired pressure against the sash, and as the lever is non-receding it stays wherever it is placed. The manufacturers call special attention to the fact that when the lock is at full pressure it is impossible to shake the window or cause it to rattle. On this account the locks are especially adapted for use in hospitals, sickrooms, schoolrooms, libraries and in fact all places where quiet is desired. The further claim is made that it saves the sash from being split off or from having a hole pounded in the top of the window frame. The device has been fully tested, and those who have used it refer to the satisfaction which it has given. It is made of semi-steel and it is claimed will not break or wear out. The lock is manufactured under patents granted to A. P. Heidt.

The Monitor Cash Register.

Whiting Mfg. Company, Northboro, Mass., are offering the cash register herewith illustrated. Three styles are carried in stock. The one shown in Fig. 1 has one

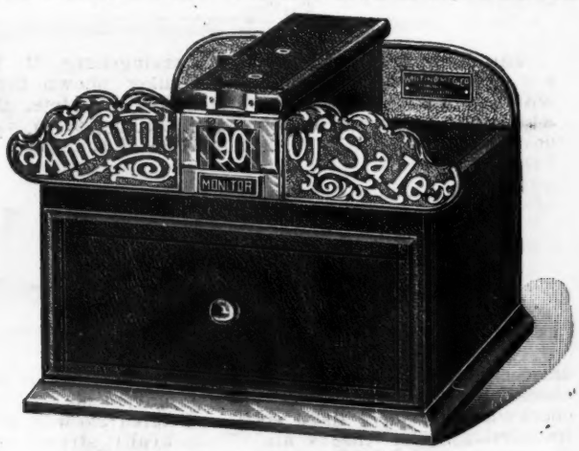


Fig. 1.—Monitor Cash Register No. 1.

slot and one compartment, the latter to hold the checks illustrated in Fig. 3, before sales are made. Each compartment will hold 400 checks. Register No. 2, not illustrated, has two slots and two compartments. Register No. 3, shown in Fig. 2, has three slots and three compartments. All have a cash drawer opening in front.

As shown in the cuts the register is constructed upon

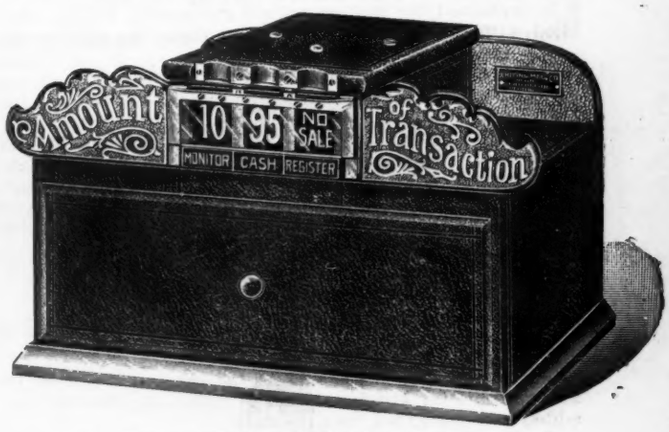


Fig. 2.—Monitor Cash Register No. 3.

the principle of using a number of independent metal checks instead of a keyboard. The manufacturers remark that it may be argued that this method is not quite as quick as pressing keys, but that the checks are so conveniently arranged and the mechanism of the register is so simple, little more time is required than in operating a keyboard machine. They further remark that in point

Non-changeable Check. | Changeable Check Holder Loaded. | Changeable Check Holder Unloaded. | Separate Changeable Check.

Fig. 3.—Checks and Check Holders.

of fact this feature furnishes one of the strongest arguments in favor of this system, as it removes the excuse for recording a wrong amount.

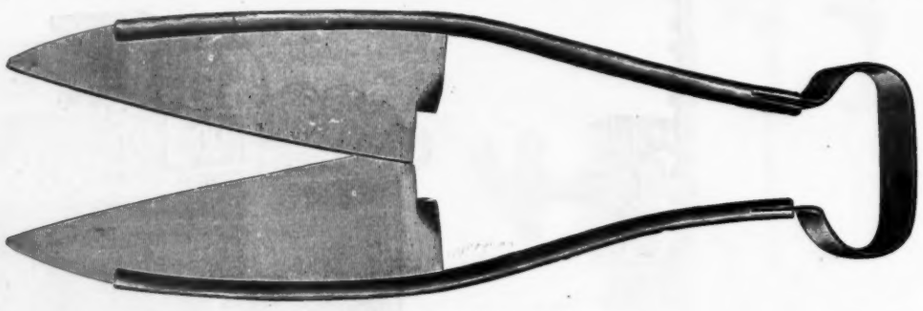
The checks are of thin, light metal, and stack compactly behind each other in compartment racks on the register, or if desired may be kept in various departments or parts of the store, and handed to the customer by the person making the sale, who in turn hands it to the cashier with the cash. Or the salesman may act as the

cashier and take a check from the register representing the amount of the sale. In either case the check is inserted in the slot, as represented in Fig. 1 by the 90-cent sale. Here it remains, exposing the amount of the transaction to view until the next check covers it and pushes it back. Amounts paid out are recorded in the same manner. When the check is fully inserted in the slot it throws open the cash drawer and rings the bell. After a check is in position in the slot it cannot be pulled out again or removed until the check retainer is unlocked. The cash drawer cannot be opened except by the insertion of a check. For the purpose of change only, "no sale" checks are provided; these stand registered as well as transactions. The checks are automatically strung in the retainer, which is the elevated part of the register, on rods which pass through two holes at the top of the checks, in order in which the checks are used. These rods extend from the front to the back of the register. By unlocking and removing the cover of the retainer at any time, any sale can be viewed by the proprietor, or the checks can be added while the register is being used. Checks for every hour in the day are supplied so that by inserting such checks the day's sales can be divided as desired. The checks may be quickly added, it is explained, by the company's accounting forms, supplied with the register, but without them the checks are as easily added as the cash. At the close of business, or at any time, the check retainer is unlocked, the contents added and compared with the cash.

In Fig. 3 non-changeable checks, separate changeable checks and changeable check holders are shown. As the name indicates, the non-changeable checks are for fixed amounts, 19 in numbers, as follows: .05, .10, .15, .20, .25, .30, .35, .40, .45, .50, .55, .60, .65, .70, .75, .80, .85, .90, .95. The changeable are made up from ten figures, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, to be arranged to make up any amount to $9.99. The holders for the changeable checks are stamped for recording three different classes of transactions—viz., "Sale," "Paid Out" and "On Account." Other classes are furnished to order.

The register is constructed with means for attaching it securely to the store shelf or counter, and is so made that not a screw is removable from the outside. These precautions are taken to provide security against thieves. The base, back and front section as well as all mechanical parts are of metal, the remaining portions of the register being of cherry. The register is arranged, it is stated, on the best mechanical principles and constructed in the highest order of workmanship. The register is finished in seal grain black, with nickel plated mountings.

The company's aim has been to provide means with every register whereby every cash transaction can be recorded separately, without departing from the system, and do this in such a manner that no ground for excuses exists. The makers state that every cash transaction can be recorded in the order in which it took place, whether for a sale, on account, or paid out for expense, from 1 cent to $9.99. The sales of each clerk can be recorded separately by the use of different colored checks, while with the multiple compartment registers, Nos. 2 and 3, a separate account of two or more departments of the business can be kept separate, or the different compartments may be used as one. The hour checks divide the days if desired; in fact it is explained any required division of business can be arranged at any time. It is pointed out that the register does all of its work in a manner which leaves no possible excuse for corrections, which may mean a theft, to be made. The price of the register is referred to as being comparatively low.



The Safety Sheep and Grass Shears.

The Safety Sheep and Grass Shears.

Crescent Mfg. Company, Fremont, Ohio, are introducing the sheep and grass shears herewith illustrated. In close shearing the round bows are referred to as acting as a safety guard, preventing the blades cutting too deep. The shears are made with or without rubber covering on the handles, and the point is made that the covering prevents the operator's hand blistering. The shears are referred to as light, easy for action and neat. They are designed for use in cutting grass about walks, flower beds, trees, fences, &c., and are made in 10-inch size.

Fig. 1.—Clyde Beet Topping Knife.

Clyde Topping and Butcher Knives.

The Clyde Cutlery Company, Clyde, Ohio, have recently added to their line, among other knives, those shown in the accompanying cuts, which represent a beet topping knife and a butcher knife. The beet knife, Fig. 1, is referred to as hand forged from best American cutlery steel and oil tempered. The butcher knife, Fig. 2, is described as having swaged blades, hand forged from best American cutlery steel, oil tempered and edge set ready for use. The tang extends through the solid cocobola handle, which is provided with bolster and brass rivets. Both knives are warranted by the makers.

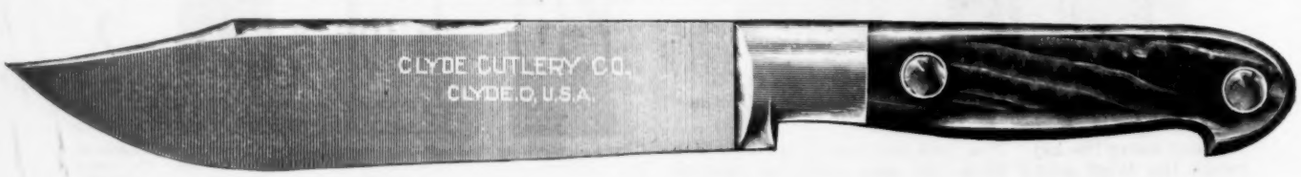


Fig. 2.—Clyde Butcher Knife No. 99.

Current Hardware Prices.

REVISED JANUARY 30, 1900.

General Goods.—In the following quotations General Goods—that is, those which are made by more than one manufacturer, are printed in *Italics*, and the prices named represent those current in the market as obtainable by the fair retail Hardware trade, whether from manufacturers or jobbers. They apply to such quantities of goods as are usually purchased by retail merchants. Very small orders and broken packages often command higher prices, while lower prices are frequently given to larger buyers.

Special Goods.—Quotations printed in the ordinary type (Roman) relate to goods of particular manufacturers, who are responsible for their correctness. They usually represent the prices to the small trade, lower prices being obtainable by the fair retail trade, from manufacturers or jobbers.

Cut Prices.—*In the present condition of the market, while many advanced prices are announced by the manufacturers, lower prices are often made by the wholesale trade who have stocks on hand purchased at former quotations.*

Names of Manufacturers.—For the names and addresses of manufacturers see the advertising columns and also THE IRON AGE INDEX SUPPLEMENT (April 6, 1899), which gives a classified list of the products of our advertisers and thus serves as a DIRECTORY of the Iron, Hardware and Machinery trades.

Standard Lists.—A new edition of "Standard Hardware Lists" has been issued and contains the list prices of many leading goods.

Additions and Corrections.—The trade are requested to suggest any improvements with a view to rendering these quotations as correct and as useful as possible to Retail Hardware Merchants.

Adjusters Blind—

Domestic, ₩ doz. $3.00....33⅓@33⅓&10%
North's.....10%
Zimmerman's—See *Fasteners, Blind.*

Window Stop—

Ives' Patent.....25&5%
Taplin's Perfection.....50%

Ammunition—See *Caps, Cartridges, Shells, &c.*

Anvils—American—

Eagle Anvils.....₩ lb 7¼@7¾c
Hay-Budden, Wrought.....9@9½c
Horseshoe brand, Wrought.....9½@9¾c
Samson.....₩ lb 7½@8c
Trenton, Wrought.....₩ lb 8¼@8¾c

Imported—

Armitage's Mouse Hole.....8¾@9¼c
Peter Wright's.....9½@9¾c

Anvil, Vise and Drill—

Millers Falls Co., $18.00.....20%

Apple Parers—See *Parers, Apple, &c.*

Augers and Bits—

Common Double Spur.60&10&10@70%
Boring Machine Augers.....60&10&10@70%
Car Bits, 12-in. twist 60&10@60&10&10%
Jennings' Pattern:
Auger Bits.....60@60&10%
Ford's Auger and Car Bits..40&10@40&10&10%
Forstner Pat. Auger Bits.....25%
C. E. Jennings & Co.:
No. 10 ext. lip. R. Jennings' list.....40@40&10%
No. 30. R. Jennings' List..50&10@60%
Russell Jennings'.....25&10&2½%
L'Hommedieu Car Bits 15&10@15&10&5%
Pugh's Black.....30%
Pugh's Jennings' Pattern.....35%
Snell's Auger Bits.....60%
Snell's Bell Hangers' Bits.....50%
Snell's Car Bits, 12-in. twist.....60%
Wright's Jennings Bits (R. Jennings' list).....50%

Bit Stock Drills—

Standard List.....65&10@70%

Expansive Bits—

Clark's small, $18; large, $26.....50&10%
Lavigne's Clark's Pattern, No. 1, ₩ doz., $26; No. 2, $18.....50&10%
Steer's No. 1, $26; No. 2, $18...40@40&5%
Swan's.....60%

Gimlet Bits—

Common Double Cut..gro. $2.75@3.25
German Pattern.....gro. $5.00@5.50
Double Cut, makers' lists.....50&5@50&10%

Hollow Augers—

Ames.....25&10%
Bonney's Adjustable, ₩ doz.....$16.00
New Patent.....25&10%
Universal.....20%

Ship Augers and Bits—

Ford's.....40%
Snell's.....40%
L'Hommedieu's.....15&10@15&10&10%
Watrous'.....40@40&5%

Awl Hafts, See *Hafts, Awl.*

Awls—

Brad Awls:
Handled.....gro. $2.75@3.10
Unhandled, Shouldered gro.65@66c
Unhandled, Patent.....gro. 66@70c
Peg Awls:
Unhandled, Patent....gro. 31@34c
Unhandled, Shouldered.gro.65@70c
Scratch Awls:
Handled, Common..gro. $3.50@4.00
Handled, Socket..gro. $11.50@12.00

Awl and Tool Sets—See *Sets, Awl and Tool.*

Axes—

First Quality, best brands.$6.00@6.25
First Quality, other brands$5.50@5.75
Jobbers' Special Brands:
Good Quality.....$5.25@5.50
Best Quality.....$6.00@6.50
Cheap, Handled Axes.....$4.75@5.00
Beveled, add 25c doz.

Axle Grease—See *Grease, Axle.*

Axles—

	Iron.	*Steel.*	
Concord, loose collar	*6¼c*	*6 c*	
Concord, solid collar	*6¾c*	*6¼c*	
No. 1 Common	*5 c*	*4¼c*	2% cash 10 days.
No. 1¼ Com. New Style	*5½c*	*5¼c*	
No. 2, Solid Collar	*5¾c*	*5½c*	
Nos. 7, 8, 11 to 14		.50&10%	
Nos. 7, 8, 11 to 14, 100 sets		.60%	
Nos. 15 to 18		.50%	
Nos. 19 to 22		.60&10%	

Boxes, Axle—

Common and Concord, not turned..lb. 5c
Common and Concord, turned..lb. 6c
Half Patent.....lb. 9c

Balances—

Sash—
Caldwell new list.....50%
Pullman's.....62½%
Spring—
Spring Balances.....50@50&5%
Chatillon's Light Spg. Balances...40&10%
Chatillon Straight Balances.....40%
Chatillon Circular Balances.....50%
Chatillon's Large Dial.....30%

Barb Wire—See *Wire, Barb.*

Bars—Crow—

Steel Crowbars, 10 to 40 lb., per lb....4@4½c

Beams, Scale—

Scale Beams, List Jan. 12, '88.....30@30&5%
Chattillon's No. 1.....30%
Chattillon's No. 2.....40%

Beaters—Egg—

Standard Co.:
No. 5 Steel Handle Dover..₩ gro. $6.50
No. 10 Cast Handle Dover..₩ gro. $8.00
No. 10 Steel Handle Dover..₩ gro $8 00
No. 15 Extra Heavy Steel Handle, ₩ gro. $15.00
Rival, ₩ gro.....$10.00
Taplin Mfg. Co.:
₩ gro.
No. 50 Small Family size.....$6.50
No. 100 Regular Family size.....$8.00
No. 102 Regular Family size, tinned...$9.50
No. 150 Large Family size.....$10.00
No. 152 Large Family size, tinned....$17.00
Lyon's, Standard size.....₩ doz. $1.75
Wonder (S. S. & Co.).....₩ gro. $7.50

Bellows—

Blacksmith—
Standard List.....70@70&5%

Net Prices.

Inch..	*30*	*33*	*34*	*36*	*38*	*40*
Each..	*$3.70*	*3.95*	*4.55*	*5.10*	*5.70*	*6.55*

Extra Length:

Each..	*$4.25*	*4.85*	*5.40*	*5.95*	*6.80*	*7.95*

Molders—

Inch..	*9*	*10*	*11*	*12*	*14*	*16*
Doz..	*$6.75*	*7.25*	*8.50*	*9.50*	*12.00*	*14.50*

Hand—

Inch...	*6*	*7*	*8*	*9*	*10*	*12*
Doz....	*$3.75*	*4.25*	*4.50*	*5.00*	*5.75*	*6.75*

Bells—Cow—

Ordinary goods.....75&10%
High grade.....70@70&10%
Jersey.....75@75&10%
Texas Star.....50&10%

Door—

Gong, Yankee.....55%
House, R. & E. Mfg. Co.'s.....50&10%
Lever and Pull, Sargent's.....33⅓&10%

Hand—

Hand Bells, Polished.....65@65&10%
White Metal.....65@65&10%
Nickel Plated.....50@50&10%
Swiss.....60@60&10%

Miscellaneous—

Farm Bells.....lb. 2@2½c
Steel Alloy Church and School.....50&10@60%
Wilmot & Hobbs Mfg. Co, Gongs.....70%

Belting

Rubber—
Common Standard.....70&10@75%
Standard.....60&10@70%
Extra.....60@60&10%
High Grade.....60@60&10%
Leather—
Extra Heavy, Short Lap.....50&10@50&10&5%
Regular Short Lap.....60@60&10%
Standard.....60&10@60&10&5%
Light Standard.....70%
Cotton—
Roasendale-Reddaway B. & H. Co.:
Sphinx Brand.....60&10%
Durable Brand.....70%

Bench Stops—See *Stops, Bench*

Benders and Upsetters, Tire—

Green River Tire Benders and Upsetters.....20%
Ill. Iron & Bolt Co.....40@40&5%
Stoddard's Lightning Tire Upsetters...40@50%

Bicycle Goods—

Lane's Cycle Hanger.....33⅓&5%
John S. Leng's Son's 1899 list:
Chain.....50%
Parts.....50%
Spokes.....50%
Tubes.....60%

Bits—

Auger, Gimlet, Bit Stock Drills, &c.—See *Augers and Bits.*

Bit Holders—See *Holders.*

Blind Adjusters—See *Adjusters, Blind.*

Blind Fasteners—See *Fasteners, Blind.*

Blind Staples—See *Staples, Blind.*

Blocks—Tackle—

Common Wooden.....70@70&10%
Eddy's Steel.....60&10%
Hartz Steel.....50&10%
Ford's Star Brand Self Lubricating.....60&10%
Hollow Steel, Ford's Pat. Star Brand.....50&10%
Lane's Patent Automatic Lock and Junior.....30%
Stowell's Novelty, Mal. Iron.....50%
See also *Machines, Hoisting.*

Boards, Stove—

1899 List:
Zinc.....30%
Crystal and Embossed.....40%

Bolts—

Carriage, Machine, &c.—
Common, list Jan. 30, '95..45&5@50&10%
Norway Iron, $3.00, list Oct. 7, '84...75@75&10%
Phila. Eagle, $3.00 list.....75&10@75&10&5%
Bolt Ends, list Jan. 30, '95.....50&5@50&10&5%
Machine, list Oct. 1, '99..5.....50&5@50&10&5%

NOTE.—*Jobbers' prices on Bolts are now generally lower than manufacturers'.*

Door and Shutter—

Cast Iron Barrel, Round Brass Knob:

Inch.....	*3*	*4*	*5*	*6*	*8*
Per doz...	*$0.33*	*.36*	*.45*	*.57*	*.80*

Cast Iron Spring Foot:

Inch.....	*6*	*8*	*10*
Per doz.....	*$1.00*	*1.25*	*1.75*

Cast Iron Chain, Flat, Japanned:

Inch.....	*6*	*8*	*10*
Per doz.....	*$0.35*	*1.20*	*1.50*

Cast Iron Shutter, Brass Knobs:

Inch.....	*6*	*8*	*10*
Per doz.....	*$0.60*	*.90*	*1.15*

Wrought Barrel Brass Knob:

Inch.....	*3*	*4*	*5*	*6*	*8*
Per doz..	*$0.44*	*.50*	*.61*	*.70*	*1.28*

Wrought Barrel.....70&10@75&5%
Wrought " Bronzed.40&5@50&10%
Wrought Flush. B. K..50&10@60&10%
Wrought Shutter...40&10&10@60&5%
Wrought Square Neck.....50@50&10%
Wrought Sunk.....50@50&10%
Ives' Patent Door.....62½@62½&10%

Stove and Plow—

Plow.....50&10@60%
Stove.....60@60&10

Tire—

Common.....57@57&10
American Screw Company:
Norway Phila., list Oct. 16, '84.....70%
Eagle Phila., list Oct. 16, '84.....72½%
Bay State, list Feb. 28, '83.....57%
Franklin Moore Co.:
Norway Phila., list Oct. 16, '84.....70%
Eagle Phila., list Oct. 16, '84.....72½%
Eclipse, list Feb. 28, '83.....57%
Port Chester Bolt & Nut Company
Empire, list Feb. 28, '83.....57%
Keystone Phila., list Oct, '84.....72½%
Norway Phila., list Oct. '84.....70%

Borers, Tap—

Borers Tap, Ring, with Handle:

Inch.....	*1¼*	*1½*	*1¾*	*2*
Per doz...	*$3.50*	*4.50*	*5.00*	*6.50*
Inch.....		*2¼*		*2½*
Per Doz.....		*$7.50*		*10.25*

Enterprise Mfg. Co., No. 1, $1.25; No. 2, $1.65; No. 3, $2.50 each.....25@30%

Boring Machines—*See Machines, Boring.*

Boxes, Mitre—

Seavey's, per doz., $30.....40%

Braces—

NOTE.—*Most Braces are sold at net prices.*

Common Ball, American..$1.10@1.20
Barber's.....50&10&10@60&10%
Fray's Genuine Spofford's.....50&10&5%
Fray's No. 70 to 120, 81 to 123, 207 to 414.....50&10&5%
P., S. & W. Co., Peck's Patent.....50&10@60%

Brackets—

Cast Iron, plain.....60@60&10@70&10%
Wrought Steel.....70@70&10@75%
Bradley's Wire Shelf:
Full cases.....80%
Broken cases.....75&10%

Bright Wire Goods—See *Wire and Wire Goods.*

Broilers—

Wire Goods Co.....70@70&10%

Buckets, Well and Fire—See *Pails*

Bucks, Saw—

Hoosier.....₩ gro. $36.00

Bull Rings—See *Rings, Bull.*

Butts—Brass—

Wrought list Sept., '96...25&5@33⅓&5%
Cast Brass, Tibbott's.....50%

Cast Iron—
Fast Joint, Broad.....50@....%
Fast Joint, Narrow.....50@....%
Loose Joint.....66⅔&5@70&10%
Loose Pin.....66⅔&5@70&10%
Mayer's Hinges.....66⅔&5@70&10%
Parliament Butts....66⅔&5@70&10%

NOTE.—*Jobbers often undersell manufacturers.*

Wrought Steel—
Loose Joint, Table and Back Flaps, Narrow and Broad, Inside Blind.....70&5@
Loose Pin.....70&10%
Loose Pin, Ball and Steeple Tip
Bronzed Wrt. Nar. and Inside Blind Butts.....50&10@50&10&5%

Cages, Bird—

Hendryx, Brass:
3000, 5000, 1100 series.....5%
1200 series.....33⅓%
200, 300, 600 and 900 series.....40&10%
Hendryx Bronze:
700, 800 series.....40&10%
Hendryx Enameled.....40&10%

Calipers—See *Compasses.*

Calks—Toe and Heel—

Blunt.....per lb. 5 @5¼c
Sharp.....per lb. 5½@5¾c
Perkins' Blunt.....₩ lb 4½c
Perkins' Sharp.....₩ lb 5½c

Can Openers—See *Openers, Can*

Cans, Milk—

Buffalo Pattern:	5	8	10 gal.
	$3.60	$4.00	.83⅓%
Illinois Pattern.	$3 40	3.10	3.50 .83⅓%
Iowa Pattern...	2.40	3.35	3.75 .33⅓%
	20	30	40 qts.
New York Patt'rn	3.00	4.35	4.00 .33⅓%
Baltimore Patt'rn	3.10	4.45	4.70 .33⅓%

Cans, Oil—

Galvanized Blue Band, 1-gal., ₩ doz. $1.75@$2.00
S. S. & Co., Galvanized Family with faucet, 3-gal., ₩ gro. $54; 5-gal., $63; 10-gal., $120.00
Glass Oil.....₩ doz. $1.50@$2.00

Caps—Percussion—

Eley's E. B.....50c
G. D.....per M 32@33c
F. L.....per M 37@40c
G. E.....per M 47@50c
Musket.....per M 57@60c

Primers—
Berdan Primers, $1.00.....5%

B. L. Caps (Sturtevant Shells) $1.00 ..... 5%
All other primers ..... *$1.10@$1.15*

Carpet Stretchers—
See *Stretchers, Carpet.*

Cartridges—
B. B. Caps, Con., Ball Swgd *$1.90*
B. B Caps, Round Ball ... *$1.12@1.15*
Blank Cartridges:
22 C. F., $5 50 ..... 10&5%
32 C. F., $7 00 ..... 10&5%
22 cal. Rim, $1.50 ..... 10&5%
32 cal. Rim, $2.75 ..... 10&5%
Central Fire 35%
Pistol and Rifle ..... 15&5%
Primed Shells and Bullets ..... 15&5%
Rim Fire Sporting 50%
Rim Fire, Military ..... 15&5%

Casters—
Bed ..... 60&10% } Extra 10% often given.
Plat ..... 60&10% }
Plate, part Brass ... 50&10% }
Philadelphia ..... 60&10% }
Boss ..... 70&10%
Boss Anti-Friction ..... 70&10%
Martin's Patent (Phœnix) 45%
Payson's Anti-friction Furniture. 70&10%
Payson's Anti-Friction Truck ... 70&10%
Standard Ball Bearing 45%
Tucker's Patent, low list 50%

Cattle Leaders—
See *Leaders, Cattle.*

Chain—
American Coil, Full Casks:

3-16	1/4	5-16	3/8	7-16	1/2	9-16
3.75	6.85	5.85	5.00	4.85	4.75	4.65
5/8	3/4	7/8	1 inch.			
4.55	4.50	4.40	4.40 cents per lb.			

Less than Cask lots add 1/4@1/2c per lb.
German Coil, list July 24, '97 ..... 60&10@60&10&10%
German Halter Chain, list July 24, '97 ..... 60&10@60&10&10%
Trace, Wagon and Fancy Chains, list April, '98 ..... 60&10@50&10&5%
Jack Chain, list July 10, '98:
Iron ..... 50&5@60%
Brass ..... 50&5@60%
Gal. Pump Chain ..... *lb. 5¼@5¾c*
Breast, Hitching and Rein Chains.
Covert Sad. Works 50%
Covert Mfg. Co.:
Breast ..... 35&2½
Halter ..... 35&2½
Heel ..... 35&2½
Rein ..... 35&2½
Stallion ..... 35&2½
Oneida Community:
Eureka Coil and Halter ..... 60@60&5%
Niagara Coil and Halters ..... 60@60&5%
Niagara Cow Ties ..... 45&5@45&10&5%
Am. Coil and Halters ..... 50&10&5@60%
Am. Cow Ties ..... 35&5@40&5%
Wire Goods Co.:
Dog Chain 60%
Universal Dbl-Jointed Chain 45%

Chalk—(From Jobbers.)
Carpenters', Blue ..... *gro. 45c*
Carpenters', Red ..... *gro. 35c*
Carpenters', White ..... *gro. 30c*
See also Crayons.

Chalk Lines—See *Lines.*

Checks, Door—
Bardsley's ..... 40&10%
Columbia ..... 50&10%
Eclipse ..... 60@60&10%

Chisels—
Socket Framing and Firmer
Standard List ..... *70c&10c&2¼@75c&5%*
Buck Bros. 30%
Charles Buck 30%
Swan's ..... 70&10&2½%
L. & I. J. White ..... 30@30&5%

Tanged—
Tanged Firmers ..... *40c&5@40c&10%*
Buck Bros. 30%
Charles Buck 30%
L. & I. J. White, Tanged ..... 35&5%

Cold—
Cold Chisels, good quality lb. 14@16c
Cold Chisels, fair quality ..... *lb. 12c*
Cold Chisels, ordinary ..... *lb. 8@9c*

Chucks—
Beach Pat., each $8.00 ..... 20%
Skinner Patent Chucks:
Combination Lathe Chucks 40%
Drill Chucks, Patent and Standard 30%
Drill Chucks, New Model ..... 2 %
Independent Lathe Chucks 40%
Improved Planer Chucks 20%
Universal Lathe Chucks 40%
Face Plate Jaws 35%
Union Mfg. Co.:
Combination 40%
Czar Drill 30%
Geared Scroll 30%
Independent 40%
Union Drill 30%
Universal 40%
Face Plate Jaws 35%

Clamps—
Adjustable, Hammers' ..... 20@20&5%
Adjustable, Stearns' 30%
Cabinet, Sargent's ..... 45&10%
Carriage Makers', P., S. & W. Co. 40&10%
Carriage Makers', Sargent's ..... 50&10%
Rosit, Parallel ..... 33½&10%
Lineman's, Ulica Drop Forge & Tool Co. 40%
Saw Clamps, see *Vises, Saw Filers'.*

Cleaners, Walk—
Star Socket, All Steel ..... ₩ doz. $4.00 net
Star Shank, All Steel ..... ₩ doz. $3.75 net

Cleavers, Butchers'—
Foster Bros. 30%
New Haven Edge Tool Co.'s ... 40@40&2%
Nichols Bros., Flat kdl., 30%; Rd. kdl., 40%
Fayette R. Plumb 35%
P., S. & W ..... 33½&2@33½&10%
& I. J. White 25%

Clippers—
Chicago Flexible Shaft Company:
Handy Toilet ..... ₩ doz. $7.20
Mascotte Toilet ..... ₩ doz. $8.40
Monitor Toilet ..... ₩ doz. $9.00
Stewart's Patent ..... ₩ doz. $10.00

Clips, Axle—
Eagle and Superior ¼ and 5-16 inch ..... *65c&10@70%*
Norway, ¼ and 5-16 inch ... *65@65c&5%*

Cloth and Netting, Wire
—See *Wire, &c.*

Cocks, Brass—
Hardware list (Globe, Kerosene, Lever Bibbs, Racking, &c.) ..... *60c&10@60c&10c&10%*

Coffee Mills—See *Mills, Coffee.*

Collars Dog—
Brass, Pope & Stevens' list 40%
Embossed, Gilt, Pope & Stevens' list 30&10%
Leather, Pope & Stevens' list 40%

Compasses, Dividers, &c.
Ordinary Goods ..... *70c&10@75%*
Bemis & Call Hdw. & Tool Co.:
Dividers 65%
Calipers, Call's Patent Inside 55%
Calipers, Double 65%
Calipers, Inside or Outside 65%
Calipers, Wing 60%
Compasses 50%
J. Stevens A. & T. Co ..... 25&10%

Conductor Pipe, Galvanized—

Territory.	Carload. Loose.	L. C. L. Nested.
Eastern	*6 3c&25c&5%*	*60c&20c&2½&5%*
Central	*60c&25c&2½&5%*	*60c&17½&5%*
Southern	*60c&20c&5%*	*60c&15%*
S. Western	*60c&20%*	*60c&12½&5%*

Terms, 2% for cash.
See also *Eave Trough.*

Coolers, Water—
S. S. & Co.: 2-gal., $14.00; 3-gal., $16.00; 4-gal., $18.50; 6 gal., $23.00.

Coopers' Tools—
See *Tools, Coopers'.*

Cord— Sash—
Braided, Drab ..... *lb. 22@25c*
Braided, White, Common ... *lb16@18c*
Cable Laid Italian ... *lb. A, 18c; B, 16c*
Common India ..... *lb 8½@9½c*
Cotton Sash Cord, Twisted ... *12@16c*
Patent Russia ..... *lb. 12 @13c*
Cable Laid Russia ..... *lb. 13½@14c*
India Hemp, Braided ..... *lb 14@15c*
India Hemp ..... *lb. 10@12c*
Patent India ..... *lb.1 0@12c*
Pearl Braided, cotton ..... ₩ lb 16@18¢
Massachusetts, White ..... ₩ lb 20¢
Massachusetts, Drab ..... ₩ lb 24¢
Eddystone Braided Cotton ..... ₩ lb 19¢
Harmony Cable Laid Italian ..... ₩ lb 18¢
Ossawan Mills:
Crown, Solid Braided White ... ₩ lb 18¢
Braided, Giant, White ..... ₩ lb 17¢
Peerless:
Cable Laid Italian ..... 16¢
Cable Laid Russian ..... 14¢
Cable Laid India ..... 12¢
Braided India ..... 18¢
Phœnix, White ..... 18¢
Samson:
Braided, Drab Cotton ..... ₩ lb 31¢
Braided, Italian Hemp ..... ₩ lb 31¢
Braided, Linen ..... ₩ lb 44¢
Braided, White Cotton, Spot ... ₩ lb 27¢
Silver Lake:
A quality, Drab, 40¢ 15%
A quality, White, 35¢ 15%
B quality, Drab, 35¢ 15%
B quality, White, 30¢ 15%
Italian Hemp, 40¢ 15%
Linen, 57½¢ 10%

Wire, Picture—
Braided or Twisted ..... *70@70c&5%*

Corn Knives and Cutters
—See *Knives, Corn.*

Crackers, Nut—
Little Giant ..... ₩ gr. $24.00
Turner & Seymour Mfg. Co 50%

Cradles—
Grain 50%

Crayons—
White Round Crayons, gross ... *5@6c*
Cases, 100 gro., $4.50&$5.00, at factory.
Metal Workers' Crayons ... gr. $2.50 } Case lots 20%
Soapstone Pencils, round, flat or square ..... gr. $1.50 }
Rolling Mill Crayons ..... gr. $2.50 }
Railroad Crayons (composition). gr. $2.00 }
See also *Chalk.*

Creamery Pails—See *Pails, Creamery.*

Crooks, Shepherds'—
Fort Madison, Heavy ..... ₩ doz. $7.00
Fort Madison, Light ..... ₩ doz. $6.50

Crow Bars—See *Bars, Crow.*

Cultivators—
Victor Garden ..... ₩ doz. $10.00

Cutters—
Glass—
Smith & Heminway Co 30%

Meat—
American 30%

Nos.	1	2	3	4	5	6
Each	$5	$7	$10	$25	$50	$60

Connecticut:

Nos.	0	1	8	10	12
each	$1.75	2.25	3.00	3.00	3.50

Enterprise ..... 25@25&7½%

Nos.	5	10	12	22	32
Each	$2	$3	$2.50	$4	$6

Dixon's, ₩ doz. ..... $3½&10%

Nos.	1	2	3	4
	$14.00	$17.00	$19.00	$30.00

Hale's, ₩ doz. ..... 60&10&10@70%

Nos.	11	12	13
	$27.00	$33.00	$45.00

Home No. 1, ₩ doz. $26.00 ..... 60%
Little Giant, ₩ doz. ..... 33½@33½&5%

Nos.	305	310	312	340	322
	$35.00	$48.00	$44.00	$75.00	$68.00

Miles' Challenge, ₩ doz. ..... 45@45&10%

Nos.	1	2	3
	$22.00	$30.00	$40.00

New Triumph No. 605, ₩ doz. $24.00 ... 33½&5%
Woodruff's, ₩ doz 40%

Nos.	100	150
	$15.00	$18.00

Chadborn's Smoked Beef Cutter, ₩ doz. $60.00
Enterprise Beef Shavers ..... 25@30%

Slaw and Kraut—
Henry Diss'on & Sons:
Slaw, C'n Grater, &c 40%
Kraut Cutters 24 x 7, 26 x 8, 30 x 9 .55%
Kraut Cutters 36 x 12, 40 x 12 ..... 40%
Tucker & Dorsey Mfg. Co.:
Kraut Cutters 40%
Slaw Cutters, 1 Knife, ₩ gr. ... $18@$20
Slaw Cutters, 2 Knife, ₩ gr. ... $22@$30

Tobacco—
All Iron, Cheap ..... *doz. $1.25@$1.50*
Enterprise ..... 35@30%
National, ₩ doz. $21.00 ..... 40%
Sargent's, ₩ doz. $24.00 ..... 60@60&10%

Washer—
Appleton's, ₩ doz. $16.00 ..... 60&10@60&10&10%
Bonney's ..... ₩ doz. $4.75

Diggers, Post Hole, &c.—
Dalbey Post Hole Auger .. per doz. $10 00
Iwan's Improved Post Hole Auger 40%
Iwan's Perfection Post Hole Digger ... ₩ doz. $10.00
Never-Break Post Hole Diggers, ₩ doz. $24.00 ..... 60%
Samson, ₩ doz. $34.00 ..... 25%

Dividers—See *Compasses.*

Dog Collars—See *Collars, Dog.*

Door Checks—
See *Checks, Door.*

Door Springs—
See *Springs, Door.*

Drawers, Money—
Tucker's Pat. Alarm Till No. 1, ₩ doz. $18; No. 2, $15; No. 3, $14; No. 4, $18.

Drawing Knives—
See *Knives, Drawing.*

Drills and Drill Stocks—
Common Blacksmiths' Drill .. each $1.75@$2.00
Blacksmiths' Self-feeding ..... *each $3.75@4.00*
Bench Drills, Stearns' 50%
Breast, Millers Falls, each $3.00 .. 15&10%
Breast, P., S. & W ..... 30@30&10%
Goodell Automatic Drills .. 40&5@40&10%
Ratchet, Curtis & Curtis 25%
Ratchet, Parker's 40%
Ratchet, Weston's ..... 20@25%
Ratchet, Whitney's, P. S. & W ... 40&10%
Whitney's Hand Drill, No. 1, $10.00; Adjustable, No. 10, $12.00 ..... 33½%

Twist Drills—
Standard List ..... *65@65c&10%*

Drill Bits or Bit Stock Drills—See *Augers and Bits.*

Drill Chucks—See *Chucks.*

Dripping Pans—
See *Pans, Dripping.*

Drivers, Screw—
Baisey's Screw Holder and Driver, ₩ doz. 2½-inch, $6; 4-in., $7.50 6-in., $9 .. 40%
Buck Bros. 30%
Buck Bros' Screw Driver Bits 27½%
Champion ..... 40&10%
Douglass Mfg. Co ..... 20@20&10%
Fray's Hol. H'dle Sets, No. 3, $12.00 50%
Gay & Parsons' Ratchet 35%
Goodell's Automatic ..... 50&10&10@50&10&10&5%
Mayhew's Black Handle 50%
Mayhew's Monarch ..... 45&10%
New England Specialty Co ..... 50&10%
Sargent & Co.'s:
Nos. 1, 50, 55 and 60. 50&10@50&10&10%
Nos. 20 and 40 ..... 66⅔@66⅔&10%
Screw Driver Bits ..... ₩ doz. 50@70¢
Stanley's R. & L. Co.'s:
No. 64, Varnished Handles ..... 60&10%
No. 66 ..... 70&10%
Swan's:
Nos. 65 to 68 ..... 50%
No. 40 ..... 40&10%
Nos. 25, 35 and 45 ..... 20&10&10%

Eave Trough, Galvanized

Territory.	Carload.	L. C. L.
Eastern	*75c&15%*	*75c&10%*
Central	*75c&12½%*	*75c&7½%*
Southern	*75c&10%*	*75c&5%*
S. Western	*75c&2½%*	*75%*

Terms, 2% for cash.
See also *Conductor Pipe.*

Egg Beaters—See *Beaters, Egg.*

Emery—*Nos. 4 to 54 to Flour, CF*

	46 gro.	1.80 gro.	F.FF
Kegs	*lb. 4½c*	*5 c*	*5 c*
¼ Kegs	*lb. 4¾c*	*5¼c*	*5¼c*
¼ Kegs	*lb. 5 c*	*5½c*	*5½c*
10-lb cans, 10 in case	*6 c*	*6½c*	*5½c*
10-lb. cans, less than 10	*10 c*	*10 c*	*8c*

Enameled and Tinned Ware—See *Ware, Hollow.*

Escutcheon Pins—
See *Pins, Escutcheon.*

Extractors, Lemon Juice
—See *Squeezers, Lemon.*

Fasteners, Blind—
Zimmerman's ..... 50&10%

Faucets—
Cork Lined ..... *70c&5@70c&10c&5%*
Metallic Key, Leather Lined ..... *70@70c&10*
Red Cedar ..... *60@50c&5*
B. & L. B. Co.:
West's Lock, Open and Shut Key 50&10%
John Sommer's Peerless Tin Key 40%
John Sommer's Boss Tin Key 50%
John Sommer's Victor Metal Key. 50&10%
John Sommer's Duplex Metal Key 60%
John Sommer's Diamond Lock 40%
John Sommer's I. X. L. Cork Lined .. 50%
John Sommer's Reliable Cork Lined. 50&10%
John Sommer's Common Cork Lined. 70%
John Sommer's Chicago Cork Lined .. 60%
John Sommer's O. K. Cork Lined 50%
John Sommer's Perfection Cedar 40%
Star ..... 60@60&5%
Star, Metal Plug new list ..... 40@40&5%
Lockport, Metal Plug, reduced list. 60&5%
Self Measuring:
Enterprise, ₩ dos. $36.00 ..... 40%
Lane's, ₩ doz. $36.00 ..... 33⅓%
National Measuring, ₩ doz. $66.00 ... 40%

Felloe Plates—
See *Plates, Felloe.*

Files—Domestic—
List revised Nov. 1, 1899.
Best Brands ..... 70@75%
Good Brands ..... *75&5@75c&10c&5%*
Fair Brands ..... *75c&10c&5@80c&5%*
Second Quality ..... *80c&10@80c&15%*

Imported—
Stubs' Tapers, Stubs' list, July 24, '97 ..... 35%

Fixtures, Grindstone—
Net Prices:

Inch	15	17	19	21	24
Per doz.	$3.30	3.55	3.75	4.50	5.25

Stowell's Giant Grindstone Hanger ... ₩ doz. $6.00
Stowell's Grindstone Fixtures 50%
P., S. & W. Co ..... 50&10&10%
Reading Hardware Co ..... 30&20&10%
Sargent's Patent ..... 60&10@60&10&10%

Fluting Machines—
See *Machines, Fluting.*

Fodder Squeezers—
See *Squeezers, Fodder.*

Forks—
Aug. 1, 1899, list.
Hay, 2 tine 65%
Hay, 3 tine 66⅔%
Manure, 4 tine 70%
Manure, 5 and 6 tine 70%
Spading ..... 70c&5%
Iowa Dig-Eay Potato 65%
Victor, Hay 70%
Victor, Manure ..... 70&8%
Victor, Header ..... 70&12½%
Champion, Hay ..... 60&20%
Champion, Manure ..... 70&5%
Columbia, Hay ..... 66⅔&5%
Columbia, Manure 70%
Columbia, Spading ..... 70&10%
Hawkeye Wood Barley 4 tine ₩ doz. $5.00; 6 tine, $6.00.
Plated.—See *Spoons.*

Frames—
Saw—
Red, Polished and Varnished .. doz. $1.05@$1.10
White ..... *doz. 75@80c*

Screens and Frames—
See *Screens.*

Freezers, Ice Cream—

Qts...	2	3	4	6	8	10
Best	*$1.40*	*1.60*	*1.85*	*2.30*	*3.00*	*3.90*
Good	*$1 25*	*1.35*	*1.70*	*2.05*	*2.65*	*3.50*
Fair	*$1.00*	*1.10*	*1.50*	*1.75*	*2.30*	*2.90*

Fruit and Jelly Presses—
See *Presses, Fruit and Jelly.*

Fry Pans—See *Pans, Fry.*

Fuse—

	Per 1000 Feet.
Hemp Fuse	*$2.60*
Cotton Fuse	*2.90*
Single Taped Fuse	*3.50*
Double Taped Fuse	*4.70*
Triple Taped Fuse	*5.70*

See ₩ M

Gates, Molasses and Oil—
Stebbin's ..... *80@80&10%*

Gauges—
Marking, Mortise, &c ..... *55c&10@55c&10c&10%*
Barrett's Comb. Roller Gauge ..... ₩ doz. $6.75@7.20
Stanley R. & L. Co.'s Butt & Rabbet Gauge ..... 90&10%
Wire, Brown & Sharpe's 25%
Wire, Morse's 25%
Wire, P., S. & W. Co ..... 10@10&5%

Gimlets—

Nail, Metal, Assorted ..gro. $1.40@1.75
Spike, Metal, Assorted gro. $3.00@3.50
Nail, Wood Handled, Assorted. gro. $4.00@4.50
Spike, Wood Handled, Assorted gro. $5.00@5.25

Glass, American Window

List Nov. 18, 1898.

Small lots from store:
Eastern
Western
From Jobbers or Factory, with Freight Allowance:
Carloads, Single Strength.
Carloads, Double Strength
} See Trade Report.

Glue—Liquid, Fish—

List A, Bottles or Cans, with Brush. 37½@50%
List B, Cans (½ pts., pts., qts.) 33½@48%
List C, Cans (½ gal., gal.) ....25@45%

Glue Pots—See *Pots, Glue.*

Grease, Axle—

Common Grade.....gro. $5.00@6.00
Allerton's Axle:
1 ℔ Tins, ₩ gr.....$9.00
3 ℔ Tin Pails, ₩ doz., $2.00; 5 ℔, $3.00; 10 ℔, $6.00.
25 ℔ wood pails.....₩ doz. $12.00
Dixon's Everlasting....10-℔ pails, ea. 85¢
Dixon's Everlasting, in bxs., ₩ doz. 1 ℔ $1.20; 3 ℔ $2.00

Grindstone Fixtures—

See *Fixtures, Grindstone.*

Gun Powder—See *Powder.*

Hack Saws—See *Saws.*

Hafts, Awl—

gro.
Peg Patent, Leather Top..$1.90@5.25
Peg Patent, Plain Top....$3.50@3.75
Sewing, Brass Ferrule.....$1.50@1.60
Saddlers', Brass Ferrule..$1.35@1.45
Peg, Common.....$1.25@1.35
Brad, Common.....$1.50@1.75

Halters and Ties—

Covert Mfg. Co., Web.....45&2%
Covert Mfg. Co., Jute Rope.....45&2%
Covert Mfg. Co., Sisal Rope.....30&2%
Covert's Saddlery Works', 90 list, W ℔.. 60&10%
Covert's Saddlery Works, Leather 60&10%
Covert's Saddlery Works, Jute....60&5%
Covert's Saddlery Works, Sisal.....60%
Covert's Saddlery Works, Manila..60&5%
Covert's Saddlery Works, Cotton.....70%

Hammers—

Handled Hammers—

Heller's Machinists'.....40@40&5%
Magnetic Tack, Nos. 1, 2, 3, $1.25, $1.50, $1.75.....40&10%
Pecx, Stow & Wilcox.....40@40&5%
Fayette R. Plumb:
Artisans' Choice, A. E. Nail....33⅓&5%
Engineers' and B. S. Hand.....50&10%
Machinists' Hammers.....50&10%
A. E. & A. E., Bell Face Nail....33⅓&5%
Riveting and Tinners'.....33⅓&5%
Sargent's C. S. New List.....45@45&10

Heavy Hammers and Sledges—

3 lb. and under...lb. 45c
3 to 5 lb .....lb. 36c } 70&10@75
Over 5 lb.....lb. 30c } &10%
Note.—Lower prices sometimes made by jobbers.
Wilkinson's Smiths'.....9½c@10c lb.

Handcuffs and Leg Irons

See *Police Goods.*

Handles—

Agricultural Tool Handles—

Hoe, Rake, Fork, &c.....50&10@60%
Shovel, &c., Wood D Handle.50@50&5%

Cross-Cut Saw Handles—

Atkins'.....40&5%
Champion.....45@45&10%
Disston's.....50%

Mechanics' Tool Handles—

Auger, assorted.....gro. $2.40@2.60
Auger, large.....gro. $2.85@3.00
Brad Awl.....gro. $1.50@1.75
Chisel Handles:
Apple Tanged Firmer, gro. ass'd. $2.25@2.35; large, $2.75@3.00.
Hickory Tanged Firmer, gro. ass'd. $1.75@2.25; large, $2.25@2.50.
Apple Socket Firmer, gro ass'd. $1.75@2.25; large, $2.25@2.50
Hickory Socket Firmer, gro ass'd. $1.60 @ $1.75; large, $1.75 @ $2.00
Hickory Socket Framing, gro. ass'd. $2.50@2.75; large, $2.65@2.85
File, assorted.....gro. $1.00@1.15
Hammer, Hatchet, Axe, &c...50&10%
Hand Saw, Varnished, doz. 75@80c
Not Varnished.....55@60c
Plane Handles:
Jack, doz. 23@25c; Jack Bolted 55@60c
Fore, doz. 35@38c; Fore, Bolted 70@75c

Hangers—

Barn Door, New Pattern, Round Groove, Regular:

Inch	3	4	5	6	8
Doz	$1.10	1.15	1.20	2.10	2.75

Barn Door, New England Pattern, Check Back, Round Groove, Regular:

Inch	3	4	5	6
Doz	$1.50	2.00	2.60	3.25

Chicago Spring Butt Co.:
Friction.....25%
Oscillating.....25%
Big Twin.....25%
Chisholm & Moore Mfg. Co.:
Advance.....55%
Cleveland.....60%
Baggage Car Door.....50%
Elevator.....40%
Railroad.....55%
Czar Ball Bearing, ₩ doz. pair $8.50
No. 10 Roller Bearing..doz. pr. 5.50
No. 20 Roller Bearing..doz. pr. 4.50
Nickel.....50%
J. G. C.....50&2&10%
Lane Bros.:
Parlor, Standard.....40&5&2½%
Parlor, New Model.....40&2½%
Barn Door, Standard.....60&2½%
Covered.....50&10&10%
Special.....60&5%
Lawrence Bros.:
Crown.....60%
New York.....60%
Sterling.....60%
McKinney Mfg. Co.:
No. 2, Standard, $18.....60&10%
No. 1, Special, $13.....60&10%
Stowell Mfg. and Foundry Co.:
Badger.....60%
Baggage Car Door.....33⅓%
Climax Anti-Friction.....50%
Elevator.....40%
Interstate.....50&10%
Magic.....50%
Matchless.....50&10%
Nansen.....50&10%
Parlor Door.....50%
Railroad.....50&10%
Street Car Door.....50&10%
Steel, Nos. 300, 400, 500...40&15%
Wild West.....50&5%
Zenith for Wood Track.....50&10%
Taylor & Boggs Foundry Co.:
Kidder's.....50@50&10%
Van Wagoner & Williams Hdw Co.:
American Trackless.....33⅓&10%
Wilcox Mfg. Co.:
Bike Roller Bearing.....60&10%
C. J. Roller Bearing.....60&10%
Cycle Ball Bearing.....50%
L. T. Roller Bearing.....60&10%
New Era.....50&10%
New Richards.....60%
O. K. Roller Bearing.....60&10&5%
Prindle Improved.....60&10%
Richards' Improved.....60&10%
Richards' Single Track.....50&10%
Wilcox Dwarf Roller Bearing.....40&10%
Wilcox-Ives.....60&10%
Wilcox Tandem Roller Bearing.....60&10%
Wilcox Trolley Ball Bearing.....40%
Wilcox Trolley Roller Bearing..50%
Wilcox Trolley Roller Bearing, Fire.....40&10%

Extra 5@10% often given.

Harness Menders—See *Menders.*

Harness Snaps—See *Snaps.*

Hasps—

McKinney's Perfect Hasp, ₩ doz. $1.10 40&10%
Wrought Hasps, Staples, &c.—See *Wrought Goods.*

Hatchets—

Best Brands.....40c&10@50%
Cheaper Brands....50c&10@50c&10c&5%
Note.—Net prices often made.

Hay and Straw Knives—

See *Knives.*

Hinges—

Blind and Shutter Hinges—

Acme and Dixie Shutter:

No	1	1½	2	2½
Doz. pair	$0.70	.65	.60	.53

Buffalo and Queen City Reversible Shutter:

No	1	1½	2
Doz pair	$0.70	.65	.60

Lull & Porter Old Style Shutter:

No	1	1½	2	2½
Doz. pair	$0 70	.65	.60	.53

1868 Old Pattern Blind Hinge:

No	1	3	5
Doz. pair	$0.80	1.45	2.85

Parker.....70@75%
North's Automatic Blind Fixtures, No. 2, for Wood, $9.00; No. 3, for Brick, $11.50.....10%
Reading's Gravity.....75&10%
Sargent's, Nos. 1, 3, 5.....60½&10%
Sargent's, Nos. 11 & 13, 7 &10@70&10&10%
Wrightsville H'dware Co.:
Acme, Lull & Porter.....65&10&5%
Buffalo Gravity Locking, Nos. 1, 2 and 5.....65&10&10%
Champion Gravity Locking, No. 75.75%
1868, Old Pat'n, Nos. 1, 3 & 5.....75%
Tip Pattern, Nos. 1, 3 and 5.....75%
Double Locking, Nos. 20 and 25.....70%
Empire, Nos. 101 and 103.....65&10%
Niagara Gravity Locking, Nos. 1, 3 and 5.....65&10&10%
Noiseless, Nos. 50, 60, 65 and 55.....65&10&5%
O. S. Lull & Porter.....65&10&10%
Pioneer, Nos. 060, 45 and 5½.....65&10&5%
Steamboat Gravity Locking, No. 10..75%
Stanley's Steel Gravity Blind Hinges, ₩ doz. sets $1.20.....20&10%

Gate Hinges—

Clark's or Shepard's—Doz. sets:

No	1	2	3
Hinges with Latches	$1.90	2.50	4.25
Hinges only	1.20	1.55	3.20
Latches only	0.70	0.70	1.20

New England:

With Latch	doz.	$1.75@1.80	
Without Latch	doz.	$1.40@1.45	

Reversible Self-Closing:

With Latch	doz.	$1.65@1.75
Without Latch	doz.	$1.30@1.35

Western:

With Latch	doz.	$1.60@1.65
Without Latch	doz.	$1.00@1.05

Spring Hinges—

Holdback, Cast Iron..gro. $9.00@10.00
Non-Holdback, Cast Iron.....gro. $7.00@7.50

Extra 5@10% often given on most of these Hinges.

J. Bardsley
Bardsley's Patent Checking.....10%
Bommer Bros.:
Bommer's.....40%
Chicago Spring Butt Co.:
Chicago.....20%
Garden City Engine House..20%
Keene's Saloon Door.....20%
Triple End.....40%
Coleman Hdw. Co.:
Champion Holdback...₩ gr. $10.00
J. G. C.....₩ gr. $9.50
Nickel.....₩ gr. $9.00
Lawson Mfg. Co.:
Matchless.....25%
Matchless Pivot.....40%
Payson Mfg. Co.:
Oblique, Dbl. Acting.....50@50&5%
Stover Mfg. Co.:
Ideal, No. 16, Detachable, ₩ gr. $12.50
Ideal, No. 4.....₩ gr. $9.00
New Idea No. 1.....₩ gr. $9.00
New Idea, Double Acting.....45%
Van Wagoner & Williams Hdw. Co.:
Acme.....30&5%
American.....30%
Columbia, No. 14.....₩ gr. $8.00
Columbia, No. 18.....₩ gr. $24.00
Crown.....30%
Gem.....30%
Knoxall.....₩ gr. $9.00
Oxford.....30%

Extra 10% often given on most of these Hinges.

Wrought Iron Hinges—

Strap and T Hinges, &c., list Mar. 15, 1898:
Light Strap Hinges..66⅔%
Heavy Strap Hinges..70%
Light T Hinges....50&10%
Heavy T Hinges....60&10%
Extra Heavy T Hinges...66⅔% } Extra 20%@25%
Hinge Hasps.....45%
Stanley's Corrugated Heavy Strap.....70%
Stanley's Cor. Ex. Heavy T.....66⅔%
NOTE.—*Change in base discounts.*
Rolled Plate.....70@70&5%
Screw Hook and Strap. { *6 to 12 in..lb 3½@3¾c* / *14 to 20 in..lb. 3¼@3½c* / *22 to 36 in...lb. 3 @3¼c*
Screw Hook and Eye:
⅜@1 inch.....lb 5½@5¾c
⅞-inch.....lb. 6½@6¾c
½-inch.....lb. 8½@8¾c

Hoes—

Eye—

Scovil and Oval Pattern.....60c&5@60c&10c&5%
Grub, list Feb. 23, 1899.....65@65c&10%
D. & H. Scovil.....35@35&5%

Handled—

Aug. 1, 1899, List:
Field and Garden.....75&2½%
Ladies', Boys', Toy and Onion.....70c&10c&10%
Street and Mortar.....75c&7½&2½%
Cotton.....70c&10c&10c&5&2½%
Planters'.....70&5&3%
Weeding.....75%
Note.—Manufacturers and Jobbers use a diversity of lists, and often sell at net prices.
Ft. Madison Crucible Garden Hoe.....75&2½%
Ft. Madison Crescent Cultivator Hoe, per doz.....75&10&2%
Ft. Madison Mattock Hoe, ₩ doz....$4.50
Ft. Madison Sprouting Hoe, ₩ doz..$4.80
Ft. Madison Dixie Tobacco Hoe.....75&20%
Kretsinger's Cut Easy, per doz....75&2%
Warren Hoe.....60%

Hog Rings and Ringers—

See *Rings and Ringers.*

Hoisting Apparatus—

See *Machines, Hoisting.*

Hollow Ware—

See *Ware, Hollow.*

Holders—

Bit—

Angular, ₩ doz. $24.00.....45&10%

File and Tool—

Nicholson File Holders and File Handles.....33⅓%

Hooks—

Cast Iron—

Bird Cage, Reading.....
Bird Cage, Sargent's List.....} .50&10@60%
Clothes Line, Sargent's List.....35&10%
Ceiling, Sargent's List.....40@40&10%
Clothes Line, Stowell's.....70%
Clothes Line, Reading List 65&10@65&10&10%
Coat and Hat, Stowell's.....70%
Coat and Hat, Reading.....70@75%
Coat and Hat, Sargent's List.....35&10%
Coat and Hat, Wrightsville.....65&10%
Harness, Reading List.....70&10@75%

Wire—

Belt.....75@75&10%
Atlas, Coat and Hat.....50@50&10%
Czar Harness.....50&10%
Wire Coat and Hat:
Acme.....60@60&5%
B. B.....70@70&5%
V Brace, Chief and Czar.....50&10%
Gem.....50&10%
Bright Wire Goods—See *Wire.*

Wrought Iron—

Box, or Case, Octagon Steel.....doz. $2.10@2.20
Cotton.....doz. $1.05@1.15
Picture, T. & S. Mfg. Co.....75%
Tassel, T. & S. Mfg. Co.....50&10%
Wrought Staples, Hooks, &c.—See *Wrought Goods.*

Miscellaneous—

Bush, Light, doz. $5.50; Medium, $6.00; Heavy, $6.50

Grass	Nos. 1	2	3	4
Best	$1.50	1.75	2.00	
Common	$1.50	1.50	1.50	1.75

Potato and Manure.....75c&15%
Whiffletree.....lb. 4½c

Hooks and Eyes:
Brass.....60c&10c&10@70%
Malleable Iron.....70c&5@70c&10%
Covert Saddlers' Works' Self Locking Gate and Door Hook.....60&10%
Crown Picture.....50&10%
Bench Hooks—See *Bench Stops.*
Corn Hooks—See *Knives, Corn.*

Horse Nails—See *Nails, Horse.*

Horseshoes—

See *Shoes, Horse.*

Hose, Rubber—

Garden Hose, ¾-inch:
Competition.....ft. 4½@ 5½c
3-ply Standard.....ft. 5½@ 6 c
4-ply Standard.....ft. 6½@ 6¾c
3-ply extra.....ft. 6½@ 7½c
4-ply extra.....ft. 7½@ 8½c
High Grade.....ft. 9 @11 c
Cotton Garden, ¾-in., coupled:
Low Grade.....ft. 5½@6c
Fair quality.....ft. 7 c
Good quality.....ft. 8 @ 8½c

Irons—Sad—

From 4 to 10.....lb 3¼@3½c
B. B. Sad Irons.....lb. 3½@4c
Chinese Laundry.....lb. 5@5½c
Chinese Sad.....lb. 3½@3½c
Mrs. Potts', per set:

Nos.	50	55	60	65
	$1.00	78@93c	95@1.10	89@1.08

New England Pressing, lb..3½@3¾c

Soldering—

Soldering Coppers.....lb. 28@30c
Covert Mfg. Co.....30&2½

Pinking—

Pinking Irons.....doz. 50@60c

Jack Screws—See *Screws.*

Jacks, Wagon—

Covert Mfg. Co., Steel.....45&2½
Daisy.....70%
Ill. I. & B. Co Common.....70@75%
Lockport.....40@40&10%
Victor.....60%
Lane's Steel.....33⅓%

Kettles—

Brass, Spun, Plain, list Jan. 10, '99 15@20%
Enameled and Tea—See *Ware, Hollow.*

Knife Sharpeners—

See *Sharpeners, Knife.*

Knives—

Butcher, Shoe, &c.—

Dick's Butcher Knives.....40%
Foster Bros.' Butcher, &c.....80%
Nichols' Butcher Knives.....50%
Hay and Straw—See *Hay Knives.*

Corn—

Ft. Madison Cut-Easy, ₩ doz.....$3.35

Drawing—

Standard List.....70&10@75&....%
Adjustable Handle.....35@38⅓%
Bradley's.....35%
Swan's.....70&10&2½%
Watrous.....30&10@40%
L. & I. J. White.....20&5@25%
Cautelo's Folding.....50&50&5%

Hay and Straw—

Blizzard.....$5.75@6.00
Iwan's Sickle Edge.....₩ doz. $11.50
Lightning.....$7.50

Mincing—

Buffalo.....₩ gro. $15.00
Smith's, ₩ doz., Single, $2; Double, $3 45@50%

Miscellaneous—

Farriers'.....doz. $2.00@3.00
Wostenholme's.....₩ doz. $3.00@3.25

Knobs—

Base, 2½-inch, Birch, Rubber tip, gro.....$1.50@1.55
Carriage, Jap, all sizes..gro. 30@33c
Door, Mineral.....doz. 83@88c
Door, Por. Jap d.....doz. 92@97c
Door, Por. Nickel....doz. $2.10@2.20
Bardsley's Wood Door, Shutter, &c...10%
Picture, Sargent's.....60&10%
Snow's Victor.....50&10%

Ladies—Melting—

L. & G. Mfg. Co.....60%
P., S. & W.....40@40&10%
Reading.....50&10%
Sargent's.....40@40&10%

Lanterns—Tubular—

Regular Tubular.....doz. $4.00@4.50
Side Lift Tubular....doz. $4.25@4.75
Square Lift Tubular..doz. $4.21@4.75
Other Styles.....40c&10@40c&10c&5%
Meyrose Side Lift Tubular, doz. $8.50.... 45&10%

Bull's Eye Police—

2¼-inch flash light....doz. $3.50@3.75
3-inch flash light.....doz. $4.00@4.25
2¼-inch regular.....doz. $3.25@3.50
3-inch regular.....doz. $3.50@3.75

Latches, Thumb—

Roggin's Latches.....doz. 35c@45c

Lawn Mowers—

See *Mowers, Lawn.*

Leaders, Cattle—

Small.....doz. 45c; *large*, 55c
Covert Mfg. Co.....45&5&2

Lemon Squeezers—
See *Squeezers, Lemon.*

Lifters, Transom—
Dickson:
3 x 4 ft. x ¼.....₱ 100 $11.00
Other sizes, Iron.....70&10%
Other sizes, Brass and Bronze.....70%
Excelsior.....60@60&10%
Payson's:
Solid Grip Nos. 643 and 644, ₱ 100, $11.00
Bronzed Iron.....70%

Lines—
Wire Clothes, Nos...	*18*	*19*	*20*
100 feet	*$3.50*	*2.75*	*$ 2.25*
75 feet			*$1.75*

Cassawan Mills.
Crown Solid Braided Chalk.....33⅓%
Mason's, No. 0 to No. 5.....33⅓%
Silver Lake Braided Chalk, No. 0, $6.00; No. 1, $6.50; No. 2, $7.00; No. 3, $7.50 ₱ gr.....80%

Locks, &c.— Cabinet—
Cabinet Locks.....33⅓@33⅓&7½%

Door Locks, Latches, &c.—
[Net prices are very often made on these goods.]
Reading Hardware Co.....40%
R. & E. Mfg. Co.....40& 0%
Sargent & Co.....40@40&10%
Slaymaker-Barry Co.....30@35%
Snow's Victor.....50&10%

Elevator—
Stowell's.....33⅓%

Padlocks—
Wrought Iron, list Dec. 3, '97.....
70@70&10%
Dog Collar, S. B. Co.....40%
R. & E. Mfg. Co. Wrt. Steel and Brass.50%
S. B. & Co.....40%

Sash, &c.—
Fitch's Bronze and Brass.....66⅔%
Fitch's Iron.....70%
Ives' Patent.....62½&10@66⅔&10%
Payson's Perfect.....70%
Payson's Signal (new list).....75%
Reading.....60&10&10@70%

Machines—
Boring—
Without Augers.

	Upright.	Angular.
Improved No. 3...	$4.25	No. 1 $5.00
Improved No. 4...	3.75	No. 2 3.38
Improved No. 5...	2.75	
Jennings'.....	2.50	3.00
Millers' Falls.....	....	4.75
Snell's, Rice's Pat.	2.50	2.75
Swan's, No. 500..	5.10	No. 200 6.45

Hoisting—
Moore's Anti-Friction Differential Pulley Block.....30%
Moore's Hand Hoist, with Lock Brake.30%

Washing—
Wayne American, ₱ doz.	$27.00	Carload lots 10% off, freight allowed.
Western Star, No. 2, ₱ doz.	28.00	
Western Star, No. 3, ₱ doz.	30.00	
St. Louis, No. 41, ₱ doz..	60.00	

Mallets—
Hickory.....45&5@50&5%
Lignumvitæ.....45&5@50&5%
Tinners', Hickory and Applewood, doz.....60@55c
Fiber Head Stearns'.....30&10%

Mats—
Door—
Elastic Steel (W. G. Co.).....10%

Mattocks—
List Feb. 23, 1899.....65@65&10%

Meat Cutters—
See *Cutters, Meat.*

Milk Cans—See *Cans, Milk.*

Mills— Coffee—
Box and Side, list Jan. 1, '88.....
60&5@60&10&5%
Net prices are often made on some goods which are lower than above discounts.
Enterprise Mfg. Co., list Jan. 17, '93..30%
National, list Jan. 1, '94.....30%
Parker's Columbia and Victor....60&10%
Parker's Upright.....30&10@40%
Swift, Lane Bros.....30%

Mincing Knives—
See *Knives, Mincing.*

Molasses Gates—
See *Gates, Molasses.*

Money Drawers—
See *Drawers, Money.*

Mowers, Lawn—
Net prices are generally quoted.

	10	12	14	16-inch
Cheap				$1.75@2.00
Good	3.00	3.25	3.50	3.75
High Grade	4.00	4.25	4.50	4.75

Pennsylvania and Continental 60&10&5%
Quaker City.....70&5%
Great American.....70&5%
Philadelphia:
Styles M., S., C., K., T.....70&10%
Style A, all Steel.....60&10%
Style E, Low Wheel.....60&10%
Style E, High Wheel.....50&10%
Drexel and Gold Coin, low list.....50%

Nails—
Cut and Wire. See Trade Report.
Wire Nails and Brads, Papered. List July 20, 1899.....80@80&10%
Hungarian, Finishing, Upholsterers', &c. See Tacks.

Horse—

Nos.	6	7	8	9	10
A. C.	25¢	23¢	22¢	21¢	21¢

40&5%

Capewell	19¢	18¢	17¢	16¢	16¢10&5%
C. B. K.	25¢	23¢	22¢	21¢	21¢...40%
Champlain...	28¢	26¢	25¢	24¢	23¢

40&5&2%

Maud S.	25¢	23¢	22¢	21¢	21¢...50%
Neponset	23¢	21¢	20¢	19¢	18¢...40%
Putnam	23¢	21¢	20¢	19¢	18¢.33⅓%
Standard	23¢	21¢	20¢	19¢	18¢...40%
Star	23¢	21¢	20¢	19¢	18¢

35& 5%

Vulcan.....23¢ 21¢ 20¢ 19¢ 18¢.....
25&10%

Picture

	1½	2	2½	3	3½ in.
Brass Head.	.45	.60	.70	.95	1.00 gro.
Por. Head.	..	..	1.10	1.10	1.10 .. gro.

Nippers, See *Pliers and Nippers.*

Nut Crackers—
See *Crackers, Nut.*

Nuts—
List Feb. 1, '99.
Cold Punched. Off
Mfrs. or U. S. Standard list.
Hexagon, plain.....3.90@4.10c
Square, plain.....3.90@4.10c
Square, C. T. & R......3.70@3.90c
Hexagon, C. T. & R......4.20@4.40c
Hot Pressed:
Mfrs., U. S. or Nar. Gauge Stan'd. Square.....4.30@4.50c
Hexagon.....4.50@4.70c
NOTE.—*Tapped Nuts are now* 2-10c. *higher than above.*

Oakum—
Best or Government.....lb. 5¾c
Navy.....lb. 4¾c
U. S. Navy.....lb. 5¼c
Plumbers' Spun Navy.....5¾c
In carload lots ¼c lb. off f. o. b. New York.

Oil Tanks—See *Tanks, Oil.*

Oilers—
Brass and Copper.....40&10@50%
Tin or Steel.....60&10&10@70&5%
Zinc.....60&5@65%
Malleable, Hammers' Improved, No. 1, $3.60; No. 2, $4; No. 3, $4.40 ₱ doz. 20%
Malleable, Hammers' Old Pattern, same list.....50&10%
Wilmot & Hobbs Mfg. Co.....70@70&10%

Openers, Can—
French.....doz. 35c
Iron Handle.....doz. 25@27c
Sprague, Iron Hdle., per doz.....35@40c
Sardine Scissors...doz. $1.75@$3.00
National, ₱ gro.....$1.75@$2.00
Stowell's.....per doz. 40@45c

Packing—
Rubber—
Standard, fair quality.....70&10@75%
Inferior quality.....75&10@80%
Extra.....60&5@60&10&5%
Jenkins' Standard, ₱ lb 80¢....25@25&5%

Miscellaneous—
American Packing.....9@10c lb.
Cotton Packing.....15@11c lb.
Italian Packing.....10½@11¼c lb.
Jute.....5@5½c lb.
Russia Packing.....12@13c lb.

Pails—
Creamery—
S. S. & Co., with gauges.. No 1 $6.50; No. 2, $6.75 ₱ doz.

Galvanized—

Inch.....	10	12	14
Water, Standard, gro.....	$23.00	$26.00	$29.00
Water, Regular..	19.00	22.00	25.00
Water, Heavy....	22.00	25.50	28.00
Fire, Rd. Bottom, gro.....	31.00	33.00	35.00
Well, gro.....	27.00	29.00	31.00

Pans—
Dripping—
Large Sizes.....lb. 4¾c
Small Sizes.....lb. 5¼c
Fry—
Standard List.....75&10@80%

Roasting and Baking—
Regal, S. S. & Co., ₱ doz., Nos. 5, $4.50; 10, $5.00; 20, $5.50; 30, $6.00
Simplex, ₱ gro., No. 40, $30.00; 50, $34.50; 60 $39 00; 140, $33.00; 150, $37 50; 160, $43.00.

Paper—
Building Paper—

	Per roll
Rosin Sized Sheathing:	*500 sq. ft.*
Light wt., 20 sq. ft. to lb.	*$0.40@0.45*
Medium wt., 12 sq. ft. to lb.	*$0.60@0.65*
Heavy wt., extra quality.	*$0.95@1.05*
Medium Grades Water Proof Sheathing.....	*$0.80@1.25*
Deafening Felt, 9, 6 and 4½ sq. ft. to lb., ton.....	*$45.00@50.00*
York Haven Waterproof Sheathing...	$1 35@1.75

Tarred Paper.
1 ply (roll 500 sq ft.), ton..$35 00@40.00
2 ply, roll 100 sq. ft.....90c
3 ply, roll 100 sq. ft.....$1.20

Sand and Emery—
List Dec. 23, 1899..50&10@50&10&10% *see Trade Report.*

Parers—
Apple—

Advance	₱ doz.	$4.50
Baldwin	₱ doz.	$5.00
Bonanza	each	$5.00
Dandy	each	$7.50
Eureka, 1898	each	$16.00
Family Bay State	₱ doz.	$12.00
Hudson's Lily the Star	₱ doz.	$4.00
Hudson's Rocking Table	₱ doz	$5.50
Improved Bay State	₱ doz.	$27.00@30.00
New Lightning	₱ doz.	$5.50
Reading 72	₱ doz.	$4.00
Reading 78	₱ doz.	$7.00
Turn Table '98	₱ doz.	$5 50
White Mountain	₱ doz.	$4.00

Potato—

Saratoga	₱ doz.	$5.50
White Mountain	₱ doz.	$4.50

Paris Green—
Arsenic, kegs or casks.....lb. 18 c
Kegs, 100 to 175 lb.....lb. 18½c
Kits, 14, 28, 56 lb.....lb. 14½c
Paper boxes, 2 to 5 lb.....lb 14½c
Paper boxes, 1 lb.....lb. 15 c
Paper boxes, ½ lb.....lb. 16 c
Paper boxes, ¼ lb.....lb. 17 c

Picks and Mattocks—
List Feb 23, 1899.....65@65&10%

Pinking Irons—
See *Irons, Pinking.*

Pins—
Escutcheon—
Brass.....60@60&5%
Iron, list Nov. 11, '85.....60@60&5%

Pipe, Cast Iron Soil—
Factory Shipments.
Standard, 2-6 in.....50@50&10%
Extra Heavy, 2-6 in.....50&10@60%
Fittings.....60@60&10%

Pipe, Wrought Iron—
Factory Shipments.
List February, 1899.
Plain and Galvanized:
Carload lots.....50&10&10%
Less than carload lots...50&10&2½%
Screw and Socket Casing,.....37½&5%
Inserted Joint Casing.....32½&5%
Cold Drawn Seamless Steel Tubing.. 60%

Planes and Plane Irons—
Wood Planes—
Molding.....40&2½@40&5%
Bench, First quality.....45&10@45&10&5%
Bench, Second quality.....50&10@50&10&5%
Bailey's (Stanley R. & L. Co) 50&10@50&10&10%
Gage Self Setting.....35%

Iron Planes—
Bailey's (Stanley R. & L. Co).....50&10@50&10&10%
Chaplin's Iron Planes.....50&10%
Miscellaneous Planes (Stanley R. & L. Co.).....25&10@25&10&10%
Sargent's.....50&10@60%

Plane Irons—
Wood Bench Plane Irons..35@35&5%
Buck Bros.....30%
Butcher's.....$5.00@5.25 to 6
Stanley R. & L. Co...50&10@50&10&10%
L. & I. J. White.....20&5@25%

Plates—
Felloe.....lb. 3½@3¾c
Self-Sealing Pie Plates (S. S. & Co.), ₱ doz. $2.00.....50%

Pliers and Nippers—
Button Pliers.....65&10@70&5%
Gas Burner, per doz., 5 in., $1.15@ $1.20; 6 in., $1.35@$1.45.

Gas Pipe..	*7*	*8*	*10*	*12-in.*
	$1.75	*$2.00*	*$2.75*	*$3.75*

Acme Nippers.....40@40&5%
Bernard's:
Parallel Pliers, &c.....33⅓%
Paragon Pliers.....50%
Lodi Pliers.....50%
Elm City Fence Pliers.....33⅓%
Heller's Farriers' Pincers and Tools.....40@40&5%
Morrill's Parallel, ₱ doz. $12.00...30&5%
P., S. & W. Cast Steel.....30&10@40%
P., S. & W. Tinners' Cutting Nippers.....40@40&5%
Utica Drop Forge & Tool Co.:
Pliers and Nippers, all kinds.....40%

Plumbs and Levels—
Plumbs and Levels.....
70c&10c&10@75c&10c&10%
Disston's.....70%
Pocket Levels.....70&10&10@75&10%
Stanley R. & L. Co.....
70&10&10@77½&10&10&10%
Stanley's Duplex.....25&10@25&10&10%
Woods' Extension.....33⅓%

Poachers, Egg—
Buffalo Steam Egg Poachers, ₱ doz., No. 1, $7.20; No. 2, $11.00; No. 3, $11.00; No. 4, $14.50.....50%

Points, Claziers'—
Bulk and 1 lb. papers.. lb. 10½@11½c
½-lb. papers.....lb. 11 @12 c
¼-lb. papers.....lb. 11½@12½c

Pokes, Animal—
Ft. Madison Hawkeye.....₱ doz. $3.25
Ft. Madison, Western.....₱ doz. $3.75

Police Goods—
Manufacturers' Lists.....25@25&5%
Tower's.....25%

Polish—Metal—
Prestoline Liquid, No. 1 (¼ pt.), ₱ doz. $3.00; No. 2 (1 qt.), $9.72.....40%
Prestoline Paste.....33⅓@40%
U. S. Metal Polish Paste, 3 oz. boxes, ₱ doz. 50¢; ₱ gr. $4.50; ½ ℔ boxes, ₱ doz. $1.25; 1 ℔ boxes, ₱ doz. $2.25.
U. S. Liquid, 8 oz. cans, ₱ doz. $1.25; ₱ gr. $12.00.
Barkeepers' Friend Metal Polish, ₱ doz. $1.75; ₱ gr. $18.00.
Wynn's White Silk, ½ pt. cans, ₱ doz. $1.50

Stove—
Black Eagle Benzine Paste, 5 ℔ cans.. ₱ ℔ 10¢
Black Eagle, Liquid, ½ pt. cans..... ₱ doz. 75¢
Black Jack Paste, ¼ ℔ cans, ₱ gro. $9.00
Ladd's Black Beauty, gr. $10.00.....50%
Joseph Dixon's, ₱ gr. $5.75.....10%
Dixon's Plumbago.....₱ ℔ 8¢
Fireside.....₱ gr. $2.50
Gem, ₱ gr. $4.50.....10%
Japanese.....₱ gr. $3.50
Jet Black.....₱ gr. $3.50
Peerless Iron Enamel, ½ pt. cans..... ₱ doz. $1.50
Wynn's Black Silk, 5 ℔ pail.....₱ ℔ 12¢
Wynn's Black Silk, ½ ℔ box, ₱ doz. $1.00
Wynn's Black Silk, 5 oz. box, ₱ doz. $0.75
Wynn's Black Silk, 8 oz. liq., ₱ doz. $1.00

Poppers, Corn—
Round or Square:
1 qt.....gro. $7.00@$8.00
1½ qt.....gro. 9 50@ 10 50
2 qt.....gro. 10.50@ 11.50
Quincy Corn Popper, 1 qt., ₱ gr. $16.50; 2 qt., $19.00.

Post Hole and Tree Augers and Diggers—
See also *Diggers, Post Hole, &c.*

Potato Parers—
See *Parers, Potato.*

Pots—
Glue—
Enameled.....40&5@40&10%
Tinned.....40@40&5%

Powder—
In Canisters:
Duck, 1 lb. each.....15c
Fine Sporting, 1 lb. each.....75c
Rifle, ½-lb. each.....15c
Rifle, 1-lb. each.....25c
In Kegs:
Duck, 6¼-lb. kegs.....$2.25
Duck, 12½-lb. kegs.....$4.25
Duck, 25-lb kegs.....$5.00
Rifle, 6¼-lb. kegs.....$1.25
Rifle, 12½-lb. kegs.....$2.25
Rifle, 25-lb. kegs.....$4.00

King's Smokeless:		
Keg (25 ℔ bulk)	$20 00	25&10&2%
Half Keg (12½ ℔ bulk)	$10.25	
Quarter Keg (6¼ ℔ bulk)	$5.25	
Canister (1 ℔ bulk)	$0.90	
Case, 1 ℔ Canisters (50 ℔ bulk)	$45.00	
Half Case, 1 ℔ Canisters (25 ℔ bulk)	$22.75	
King's Semi-Smokeless:		
Keg (25 ℔ bulk)	$16.00	30&2%
Half Keg (12½ ℔ bulk)	$8.25	
Quarter Keg (6¼ ℔ bulk)	$2.75	
One Pound Can, bulk	$0.50	

Presses—
Fruit and Jelly—
Enterprise Mfg. Co.....20@25%

Pruning Hooks and Shears—See *Shears.*

Pullers, Nail—
Crown, ₱ doz. $18.00.....50%
Crown Prince, ₱ doz. $15.00.....50%
Cyclops.....40@40&10%
Diamond B, No. 2, doz. $22.; No. 3, $11.....40%
Eureka, 5 ℔, doz., $16.00; 3 ℔ $15...40%
Giant, No. 1, ₱ doz. $18; No. 2, $16.50; No. 3, $15.....40%
National, ₱ doz. $24.00.....50%
Miller's Falls, No. 3, per doz. $12.00. 15&10%
Pelican, ₱ doz. $9.00.....40&10%
Scranton No. 1 and 2, ₱ doz.....$9.00
Scranton, No. 3, ₱ doz.....$8.50

Pulleys—

Hay Fork, Swivel or Solid Eye..... doz. $1.60@2.00

Hay Fork, Stowell's Anti-Friction, 5-in. Wheel, ₱ doz. $12.00..... 40%
Hot House, Awning, &c.....60@60&10%
Japanned Clothes Line.....60@60&10%
Japanned Screw.....70&10&10%
Japanned Side.....70&10&10%
Stowell's Ceiling or End, Anti-Friction 60%
Stowell's Dumb Waiter, Anti-Friction .. 60&10%
Stowell's Electric Light..... .....60%
Stowell's Side, Anti-Friction.....60&10%

Sash Pulleys—

Common Sense, 1¾ in.... ₱ doz., 20¢; 2 in., 22¢.
Empire.....1¾ in., 17¢; 2 in., 19¢
Grand Rapids All Steel Noiseless....40%
I. C.....1¾ in., 15¢; 2 in., 17¢
Ideal No. 13.....1¾ in., ₱ doz., 20¢
Improved.....1¾ in., 17¢; 2 in., 19¢
Niagara.....1¾ in., 16¢; 2 in., 19¢
No. 26, Troy.....1¾ in., 16¢; 2 in., 19¢
Star.....1¾ in., 16¢; 2 in., 19¢
Acme.....1¾ in., 16¢; 2 in., 19¢
Fox-All-Steel, Nos. 3 and 7, 2¼ in.... ₱ doz. 25¢
No. 9, 1¾ in..... ₱ doz. 20¢
Extra for Plated Finish...₱ doz. 20¢
Extra for Anti-Friction Bronze Bushing..... ₱ doz 10¢
Tackle Blocks—See *Blocks.*

Pumps—

Cistern.....60@60@5%
Pitcher Spout.....70@10@75%
Pump Leathers, all sizes.....gro. $6.00
Flint & Walling's Fast Mail.....50@55%
Flint & Walling's Pitcher Spout. 70&10%
Loud's Suction Pumps, U. H. Co.....20%
Myer's Pumps, low list.....50%
Contractors' Rubber Diaphragm Non-chokable, B. & L. Block Co.....20%

Punches—

Revolving (4 tubes)...doz. $3.75@4.00
Saddlers' or Drive, good..doz. 65@70c
Spring, good quality.....$1.70@1.80
Bemis & Call Co.'s Cast Steel Drive....50%
Bemis & Call Co.'s Check.....55%
Bemis & Call Co.'s Spring.....50%
Niagara Hollow Punches.....45%
Niagara Solid Punches.....55%
Spring, Leach's Pat.....15%
Steel Screw, B & K. Mfg. Co.....40%
Tinners' Hollow, P., S. & W. Co..... 35@35&5%
Tinners' Solid, P., S. & W.Co., ₱ doz., $1.44.....55%

Rail—

Barn Door, &c.—

Barn Door, Light..In	½	⅝	¾
100 feet	*$2.00*	*$2.50*	*$5.00*

B. D., for N. E. Hangers:

	Small.	*Med.*	*Large.*
100 feet	*$2 20*	*2.70*	*3.20*

Sliding Door, Bronzed Wr't Iron, ft. 6¼c
Sliding Door, Iron Painted....2½@3c
Sliding Door, Wrought Brass. 1¼ in.... lb. 36c..30%
Cronk's Double Braced Steel Rail, ₱ foot..... 3½¢
Lanes' O. N. T., ₱ 100 ft., 1 inch....$3.00
Lanes' Standard, ₱ 100 ft..... 4.25
Lawrence Bros.' ..... ₱ ft. 4¼¢
McKinney's None Better..... ₱ ft. 3¢
McKinney's Standard..... ₱ ft. 3¼¢
Moore's, Wr't. Bracket, Steel.....3¼¢
Stowell's Steel Rail, plain 15%

Rakes—

Aug 1, 1899, List:
Cast Steel..... 70@5&2%
Malleable.....66⅔%
Fort Madison Red Head Lawn.....$3 25
Fort Madison Blue Head Lawn.....$3 00

Rasps, Horse—

Disston's 75%
Heller Bros.....60&10& 0%
New Nicholson Horse Rasp.....70&10%
See also *Files.*

Razors—

Fox Razors, No. 42, per doz., $10.00: No. 44, $12.00; No. 82, Platina $12.00.

Razor Strops—

See *Strops, Razor.*

Reels—

Fishing—

Hendryx Aluminum, German Silver, Gold, Bronze, Silver, Rubber, Populo and Salmon, Single Action, Multiplying and Quadruple, all sizes.....25%
Hendryx Single Action Series, 102P and PN, 202P and PN, 102 PR and PRN, 202 PR and PRN, 304 P and PN, 00304P and PN, 502 and 502N, 802 and 802N, 02084N, Competitor.50%
Hendryx Multiplying and Quadruple Series, 3004N and PN, 4N and PN, 2904N, 2904P and PN, 002904PN, 0924 and 0924N, 5000N and PN.....40&10%

Registers—

For points on Mississippi River and East:
Black Japanned.....30&10%
White Japanned.....30&10%
Bronzed Finishes.....30%
Nickel Plated.....30&10%
Electro Plated in Brass, &c..30&10%
White Porcelain.....30%
Solid Brass and Bronze Metal..20%
Note—Higher prices are quoted in territory further West

Riddles, Grain or Sand—

16 in. per doz.....$2.00@$2.25
17 in. per doz.....$2.25@$2.50
18 in. per doz.....$2.50@$2.75

Rings and Ringers—

Bull Rings—

	2	*2½*	*3 Inch.*
Steel	*$0.75*	*0.83*	*0.88 doz.*
Copper	*1.10*	*1.30*	*1.50 doz.*

Hog Rings and Ringers—

Hill's Rings....gro. boxes, $4.50@5.00
Hill's Ringers, G. I.....doz. 75c
Blair's Rings..... ₱ gr. $5.75@6.00
Blair's Ringers..... ₱ doz. $0.90@1 00
Brown's Rings..... ₱ gro. $6.00@6.25
Brown's Ringers..... ₱ doz. $1.00@1.10
Perfect Rings..... ₱ gro. $9.00@9.50
Perfect Ringers. ₱ doz.....$1.25@1.35
Rapid Rings..... ₱ gro. $6.00
Rapid Ringers..... ₱ doz. $0.50

Rivets and Burrs—

Copper.....40@10@50%
Iron or Steel:
Tinners' .....52½@52½@10%
Miscellaneous .....52½@52½@10%

Rivet Sets—See *Sets.*

Roasting and Baking Pans—See *Pans, Roasting and Baking.*

Rollers—

Acme, Stowell's Anti-Friction 50%
Barn Door, Sargent's list. 60&10&10@70%
Lane's, Stay ....33⅓&5%
Stowell's Barn Door Stay...₱ doz. $1.25

Rope—

NOTE.—*Carload lots, except on Jute Rope, ¼c. per lb. less than the following prices, which are for small lots.*

Manila, 7-16 in. and larger. lb. .. @15½c
Manila.....¾-inch lb. .. @16 c
Manila..¼ and 5-16 in. lb. .. @16¼c
Manila, Tarred Rope, 15 thread..... lb .. @15½c
Manila Hay Rope Med'm. lb .. @15½c
Sisal, 7-16 in. and larger, lb. .. @10½c
Sisal.....¾-inch. lb... @11 c
Sisal....¼ and 5-16 in. lb. .. @11½c
Sisal, Hay Rope, 2 to 10 ply..... lb. .. @10½c
Sisal, Tarred, Medium Lath Yarn.....lb... @10 c
Cotton Rope:
Best, ¼-in. and larger..lb. 13@14 c
Med'm, ¼-in. and larger lb. 10@12 c
Com., ¼-in. and larger.lb. 8@10 c
Jute Rope, No. 1, ¼ in. and up ....lb.. .. @7 c
Jute Rope No. 2, ¼ in. and up..... ....lb.. .. @6¼c

Wire Rope—

List July 1, '99.....30&3½%

Ropes, Hammock -

Covert Mf'g. Co.....45&2%
Covert Saddlery Works.....60%

Rules—

Boxwood..75&10&10&10@75&10&10 &10&10%
Ivory ...40&10&10@40&10&10&10&10%
Lufkin's Steel..... .....50&10%
Lufkin's Lumber ... .50&10%
Stanley R. & L. Co.:
Boxwood...75&10&10@75&10&10&10%
Ivory..... .35&10&10@35&10&10&10%

Sad Irons—See *Irons, Sad.*

Sand and Emery Paper and Cloth—

See *Paper and Cloth.*

Sash Cords—See *Cord, Sash.*

Sash Locks—See *Locks, Sash.*

Sash Weights—

See *Weights, Sash.*

Sausage Stuffers or Fillers—See *Stuffers or Fillers, Sausage.*

Saw Frames—

See *Frames, Saw.*

Saw Sets—See *Sets, Saw.*

Saw Tools—See *Tools, Saw.*

Saws—

Atkins' Circular..... ..... 50@50&10%
Atkins' Band ..... 50&10@60%
Atkins' Cross Cuts ..... 35&5%
Atkins' Mulay, Mill and Drag.....50&10%
Atkins' One-Man Saw..... .....40%
Atkins' Wood Saws 40%
Atkins' Hand, Compass, &c..... ....40%
Disston Circular Solid and Inserted Tooth..... 50%
Disston Band 2 to 14 in. wide.....60%
Disston Band ¼ to 1¼..... .....70%
Disston Crosscuts..... .....45@45&10%
Disston Narrow Crosscuts....50@50&10%
Disston Mulay, Mill and Drag..... 50%
Disston Framed Woodsaws..35@35&7½%
Disston Woodsaw Blades.....40@40&7½%
Disston Woodsaw Rods..... .....20%
Disston Handsaws, Nos. 12, 99, 9, 10, d100, D8, 120, 76, 77, 8.....25@25&7½%
Disston Hand Saws, Nos. 7, 107, 10, 3, 1, 0, 00, Combination...30@30&7½%
Disston Compass Keyhole, &c25@25&7½%
Disston Butcher Saws and Blades.....% 35@35&7½%
C. E. Jennings & Co.'s.....25&5@30&5%
Peace Circular and Mill..... .....50%
Peace Cross Cuts, list Jan. 1, '99.....50%
Peace Hand, Panel and Rip.....30%
Richardson's Circular and Mill.....50%
Richardson's X Cuts, list Jan. 1, '99..50%
Richardson's Hand, &c..... .....30%
Simonds' Circular Saws..... .....50%
Simonds' Crescent Ground Cross Cut Saws..... .....35%
Simonds' One-Man Cross Cuts.... 40&10%
Simonds' Gang Mill, Mulay and Drag Saws..... .....45@45&5%

Hack Saws—

Disston Concave Blades.....25%
Disston Keystone..... .....30%
Disston Hack Saw Frames..... .....30%
Griffin's complete..... .....50@50&10%
Griffin's Hack Saw Blades...50@50&10%
Star Hack Saws and Blades..... 15&10%

Scroll—

Barnes' No. 7, $15..... .....25%
Barnes' Scroll Saw Blades..... .....40%
Barnes' Velocipede Power Scroll Saw, without boring attachment, $18; with boring attachment, $20..... .....90%
Lester, complete, $10.00..... .....15&10%
Rogers, complete $4.00..... .....15&10%

Scale Beams—

See *Beams, Scale.*

Scales—

Family, Turnbull's..... ...30@30&10%
Hatch, Counter:
Platform, ¼ lb. by ¼ oz...doz. $5.75
Two Platforms, 8 lb. by ½ oz..... doz. $16 00
Union Platform, Plain....$2.00@2.10
Union Platform, Striped..$2.15@2 25
Chatillon's Eureka..... .....25%
Chatillon's Favorite..... .....40%
Chatillon's Grocers' Trip Scales.....50%
Pelouze Scales—Family, Candy, Grocers' and Postal.....New list net
"The Standard" Portables 45%
"The Standard" R. R. and Wagon....50%

Scrapers—

Box, 1 Handle .....doz $2.25@2.75
Box, 2 Handle..... doz. $3.75@4.00
Ship, No. 1, doz. $3.50; No 2. $2.25@2.40
Adjustable Box Scraper (S. R. & L. Co.) $6.00..... .....40&10%
Foot, W. E. Pratt Mfg. Co..... ₱ doz. $1.15@$1.25

Screens, Window and Frames—

Bonanza Window Screens...50&10&2½%
Maine Window Screen Frames 40&10&5%
Phillips' Window Screen Frames.....60%
Porter's Extension Window Screens.. 50&10%
Wabash Spring Adj. Screen.....50%

Screw Drivers—

See *Drivers, Screw.*

Screws—

Bench and Hand—

Bench, Iron..doz. 1 in., $3.50@3.75; 1½, $3.85@3.10; 1¼, $3.35@3.50
Bench, Wood, Beech..doz. $3.50@2.75
Hand, Wood.....35@40%
Hand, Grand Rapids..... .....35%
Hand, R. Bliss..... ....35%

Coach, Lag and Hand Rail—

Lag, Common Point, list Oct. 1, '99..... .....65@5@...%
Coach and Lag, Gimlet Point, list Oct. 1, '99..... .....65@ ...%
Hand Rail, list Jan. 1, '81.60@10@...%

Jack Screws—

Millers Falls..... .....50&10&10%
Millers Falls, Roller ....50&10%
P., S. & W..... .....40&5@40&10%
Sargent..... .....60&10@60&10&10%

Machine—

List Jan. 1, '98.
Flat or Round Head, Iron.....50%
Flat or Round Head, Brass.....50%

Set and Cap—

Set (Iron or Steel) 60%
Sq. Hd. Cap..... .....55%
Hex. Hd. Cap..... .....50%

Wood—

List Jan. 1, 1900.
Flat Head, Iron..... .....80%
Round Head, Iron..... .....75%
Flat Head, Brass..... .....77½%
Round Head, Brass..... .....72½%
Flat Head, Bronze 72½%
Round Head, Bronze..... .....70%
Drive Screws..... .....80%
Note.—An extra 10 or 10&5% is often given.

Scroll Saws—See *Saws, Scroll.*

Scythes—

Scythe Snaths—

See *Snaths, Scythe.*

Seeders—

Raisin—

Enterprise..... .....25@30%

Sets—

Awl and Tool—

Brad Awl and Tool Sets:
Wood Hdle., 10 Awls doz. $2.00@2 25
Wood Hdle., 14 Awls, 6 Tools.... doz. $2.50@2.60
Aiken's Sets, Awl and Tools: No. 20, ₱ doz. $10.00. 60&10@60&10&5%
Fray's Adj. Tool Holders....Nos. 1, $12; 2, $18; 3, $12; 4, $9; 5, $7..... .....50%
Millers Falls Adj. Tool Hdls, No. 1, $12; No. 4, $12; No. 5, $18 .... 15&10%
Stanley's Excelsior: No. 1, $7.50; No. 2 $4.00; No. 3, $5.50..... .....30&10@40&10&10%

Garden Tool Sets—

Ft. Madison Rakes, Shovel and Hoe.... ₱ doz.....$9.00

Nail—

Round, assorted.....gro. $3.25@3.75
Octagon..... .....gro. $4.25@4.75
Knurled. Good.....gro. $6.00@6.50
Buck Brothers..... .....27½%
Cannon's Diamond Point, ₱ gr. $12..25%
Snell's Corrugated, Cup Pt..... .....50%
Snell's Knurled, Cup Pt..... ....66⅔%

Rivet—

Regular list.....70@70&10&5%

Saw—

Aiken's Genuine..... ₱ doz. $4.50@5.00
Aiken's Imitation ..... ₱ doz. $3.00@3.10
Atkin's Criterion..... .....40%
Atkin's Adjustable..... .....40%
Bemis & Call Co.'s Cross Cut..... .....30%
Bemis & Call Co.'s Plate..... .....20%
Bemis & Call Spring Hammer..... .....30%
Disston's Star and Mona..ch..... .....30%
Hammer, Bemis & Call Co.'s new Pat.45%
Morrill's No. 1, $15.00..... .....40&20%
Nos. 3 and 4, Cross Cut, $22.00.40&20%
No. 5, Mill, $31.00..... .....40&20%
No. 10, $15.50..... .....40&20%
No. 11, $16.00..... .....40&20%
Taintor Positive, ₱ doz. $18 ....60%

Sharpeners, Knife—

Tanite Mills ₱ gross, $14.40....25@33⅓%

Shaves, Spoke—

Iron..... ....doz. $1 00@1 25
Wood..... .....doz. $1.75@2.25
Bailey's (Stanley R. & L. Co.).....50&10%
Goodell's, ₱ doz. $9.00..... .....15&10%

Shears—

Cast Iron...	*7*	*8*	*9 in.*
Best	*$16.00*	*18.00*	*20.00 gro.*
Good	*$13 00*	*15.00*	*17 00 gro.*
Cheap	*$5.00*	*6.00*	*7.00 gro.*

Straight Trimmers, &c.:
Best quality, Jap..60&10c10@70&5% " Nickel.....60@60&5%
Fair qual. Jap.....75c10@80% " Nickel.....70c10@75%
Tailors' Shears.....40@40c10%
Acme Cast Shears.....40@40&5%
Heinisch's Tailors' Shears.....40@40&5%
National Cutlery Co., Nickel.....60&10%
National Cutlery Co., En. Hdls...70&10%
Seymour's, Jap.....70@70&5%
Seymour's Nickel.....60@60&5%
Seymour's Tailors' Shears.....40%
Wilkinson's Hedge.....50%
Wilkinson's Sheep.....15%

Tinners' Snips—

Forged Handles, Steel Blades..60c10%
Malleable Handles, Laid with Steel. .40%
Forged Handles, Steel Blades, Berlin.. 40&10%
Niagara Snips.....40%
Seymour's..... .....40@40&5

Pruning Shears and Tools—

Disston's Combined Pruning Hook and Saw, ₱ doz. $18.00.....25@25&10%
Disston's Pruning Hook, ₱ doz. $12.00.. 25@25&10%
John T. Henry Mfg. Company Pruning Shears all grades.....50&5%
Orange Shears.....50&30%
Grape.....50&10%
Tree Pruners.....75%
P., S. & W. Co.....33⅓@33⅓&10%
Seymour's.....60&10&10@70&5%

Sheaves—Sliding Door—

Stowell's Anti-Friction..... .....50%
Patent Roller.....60&10@60&10&5%
Patent Roller Hatfield's, Sargent's list. 80&10@80&10&7½%
Reading..... ..... 70&10@75%
R. & E..... .....45&10%
Wrightsville, Hatfield Pattern.....80%

Sliding Shutter—

Reading list.....70&10@75%
R. & E..... .....60@60&10%
Sargent's list.....50&5@50&10&5%

Shells—

Shells, Empty—

Brass Shells, Empty:
First quality, all gauges.....60&5%
Club, Rival, Climax, 10 and 12 gauge.. 65&5%
Paper Shells, Empty:
Club, Rival, Climax, Ideal, 14, 16 and 20 gauge ($7.50 list).....20&10&5%
Club, Rival, Climax, League, 10 and 12 gauge..... .....33⅓&5%
Acme, Leader, New Rapid, Ideal, Smokeless, 10, 12, 16 and 20 gauge. 33⅓&10&5%
Trap and Metal Lined, 10, 12, 16 and 20 gauge..... .....33⅓&10&5%
Primrose Club, Blue Rival, Yellow Rival, New Climax, 10, 12, 16 and 20 gauge..... .....20%
High Base, Nitro, Repeater, Defiance, New Victor, 10, 12, 16 and 20 gauge 15%

Shells, Loaded—

Loaded with Black Powder..... .40&5%
Loaded with Nitro Powder..... .40&10&10&5%

Shoes, Horse, Mule, &c.—

Factory Shipments:
Horse and Mule, per keg.....$3.75
Burden's, all sizes..... .....$3.70
Bryden, Phœnix, Perkins, &c $3.75
Diamond State, Shoenberger, Crescent, &c. $3.75..... .....5%
NOTE.—*See Trade Report.*

Shot—

Drop, up to B, 25-lb. bag...$1.40@1.47
Drop, up to B. 5-lb. bag ..... .35
Drop, B and larger, 25-lb. bag..... $1.65@1.75
Drop, B and larger, 5-lb bag .35@.40
Buck, 25-lb. bag..... .....$1.65@1.75
Buck, 5-lb. bag..... .....35@.40
Chilled, 25-lb. bag.....$1.65@1.75
Dust Shot, 25-lb. bag.....$2.00@2.10
Dust Shot, 5-lb bag..... ... .50

Shovels and Spades—

No. 2, Polished, Sq. or Rd. Point, D or L Handle:

	A1, 1st Grade.	*B2, 2d Grade.*
Plain Back....	*$10.50*	*$9 60*
Strap Back....	*9.90*	*9 00*
Cleveland Pat'n	*10.20*	*9.30*

	C3, 3d Grade.	*D4, 4th Grade*
Plain Back....	*$8.70*	*$8.10*
Strap Back....	*8.10*	*7.50*
Cleveland Pat'n	*8.40*	*7.80*

All other sizes add 30c doz.
Black deduct 30c doz.

Note.—The above are the regular Association prices to small retailers, but are often shaded by jobbers.

Shovels and Tongs—

Brass Head.....60&5@60&10%
Iron Head.....60&5@60&10%

Sieves and Sifters—

Hunter's imitation.gro. $11.00@13.00

Buffalo Metallic Blued, S. S. & Co., ₩ gr.:

14&16	16&18	18&20
$12.90	$13.80	$15.00

Eclipse.....₩ gr. $10.00
Electric Light.....₩ gr. $12.00
Hunter's Genuine.....₩ gr. $12.50
Baker (Barler's Pat.) Flour Sifters, ₩ doz., $3.00.....35%

Sieves, Wooden Rim—

Nested, 10, 11 *and* 12 *Inch.*
Mesh 18, Nested, doz.....$0.75@0.80
Mesh 20, Nested, doz......85@ .90
Mesh 24, Nested, doz..... 1.00@1.05

Sinks—

Cast Iron—

Low list.....60@65%

NOTE.—*The low list is now generally used, but some jobbers use high list.*

Wrought Steel—

Columbus Galv'd and Enameled..60&5%
Columbus, Painted 45%
L. & G.....50%

Skeins, Wagon—

Cast Iron.....70@70&10%
Malleable Iron.....40&10@50%
Steel.....55@55&5%
I. I. & B. Co. Steel.....35%

Slates—

"D" Slates.....50&10@50&10&10%
Unexcelled Noiseless Slates.....
60&5 tens@60&5 tens&5%
Wire Bound.....40&10@50%
Double Slates, add $1 case, net.

Slaw Cutters—See *Cutters.*

Snaps, Harness—

German.....40@40&10%

Covert Mfg. Co.:
Derby.....35&2%
High Grade.....45&2%
Jockey.....40&2%
Trojan.....45&2%

Covert's Saddlery Works:
Banner.....60&10%
Crown.....60&10%
Triumph.....60&10%

W. & E. T. Fitch Co.:
Bristol.....40&10%
Empire.....50&5%
German.....40%
National.....50&5%
Perfect.....45%
Clipper.....50&5%
Champion.....40%
Security.....40%
Victor.....60&5%

Oneida Community:
Solid Steel.....65@65&10%
Solid Swivel.....65&10 @65&10&10%
Sargent's Patent Guarded.....
60%@60%&10%

Snaths—

Scythe.....45&5%

Snips, Tinners'—See *Shears.*

Soldering Irons—

See *Irons, Soldering.*

Spoke Trimmers—

See *Trimmers, Spoke.*

Spoons and Forks—

Silver Plated—

Flat Ware.....50&10@60&10%
Wm. Rogers Mfg. Co.....50&10%

Miscellaneous—

German Silver.....60&10%
Wm. Rogers Mfg. Co.:
18% German Silver.....60%
Rogers' Silver Metal.....50&10%

Springs—

Door—

Gem (Coil).....20%
Star (Coil).....30%
Torrey's Rod, 30 in....₩ doz. $1.10@1.95
Warner's No. 1, ₩ doz. $1.50; No. 2, $2.40.....55@55&10%
Victor (Coil).....60&10@60&10&5%

Carriage, Wagon, &c.

1¼ *in. and wider*...Blk. Hf. Brt. Brt.
Tested and Temp 5½ 6¾ 6c lb
Oil Tested and Tempered..... 6½ 6¾ 7c lb
Cliff's Bolster Springs.....35%
Cliff's Seat Springs.....₩ pair 55¢

Sprinklers, Lawn—

Enterprise.....35@30%
Philadelphia No. 1, ₩ doz. $12; No. 2, $15; No. 3, $24.....30%

Squares—

Nickel plated.... } *List Jan. 5, 1900*
Steel and Iron... } 70@70&5@.....%
Rosewood Hdl. Try Square and T. Bevels .....60&10&10@70%
Iron Hdl. Try Squares and T-Bevels. 40&10@40&10&10%
Disston's Try Sq. and T-Bevels....60&10%
Winterbottom's Try and Miter...50&10%

Squeezers—

Lemon—

Wood, Common, gro., No. 0, $5.00; No. 1, $5.75@6.00; No. 2, $10.00.
Wood, Porcelain Lined:
Cheap.....doz. $2.00@2.75
Good Grade.....doz. $3.00@3.50
Tinned Iron.....doz. $0.75@1.25
Iron, Porcelain Lined doz. $2.90@3.25
Jennings' Star.....₩ doz. $1.85@1.90
King.....₩ doz. $2.00

Staples—

Barbed Blind.....lb. 9@10c
Electricians', Association list..75&10%
Fence Staples, same price as Barbed Wire. See Trade Report.
Poultry Netting.....80&10%
Grand Crossing Tack Co.'s list....75&10%

Steels, Butchers'—

Dick's.....40%
Foster Bros'.....30%
C. & A. Hoffmann's.....40%
Nichols Bros.....50%

Steelyards.....25@25&10%

Stocks and Dies—

Blacksmiths'.....40%
Gardner.....50%
Green River.....25%
Lightning Screw Plate.....25%
Little Giant.....25%
Reece's New Screw Plates.....25@30%
Curtis Reversible Ratchet Die Stock.25%

Stone—

Scythe Stones—

Pike Mfg. Co., list '95-'96.....33⅓%
Cleveland Stone Co., list Nov., '92..33⅓%

Oil Stones, &c.

Pike Mfg. Co.:
Hindostan No. 1, ₩ b...8¢ } 33⅓@
Sand Stone.....5¢ } 33⅓&10%
Turkey Oil Stone, Extra, 5 to 9 in.....80¢ } 33⅓&10%
Turkey Slips.....$1.50 } 33⅓&10%
Jelly White Washita.....60¢
Rosy Red Washita.....60¢
Washita Stone, Extra.....50¢
Washita Stone, No. 1.....40¢
Washita Stone, No. 2.....30¢
Lily White Slips.....90¢
Rosy Red Slips.....90¢
Washita Slips, Extra.....80¢
Washita Slips, No. 1.....70¢
Arkansas Stone, No. 1, 3 to 5½ in. $2.80 } 33⅓@33⅓&10%
Arkansas Stone, No. 1, 5½ to 8 in. $3.50 } 33⅓@33⅓&10%

Tanite Mills:
Emery Oil, ₩ doz. $5.00.....50@60%

Stoners—

Cherry—

Enterprise.....25@30%

Stops, Bench—

Millers Falls.....15&10%
Morrill's...₩ doz., No. 1, $10.00; No. 2, $11.00, 40&20%

Stops, Window—

Ives' Patent.....25&5%
Taplin's.....45%

Stove Boards—

See *Boards, Stove.*

Stove Polish—See *Polish, Stove.*

Straps, Box—

Cary's Universal, case lots.....20&10%

Stretchers, Carpet—

Cast Iron, Steel Points....doz. 55@65c
Cast Steel, Polished.....doz. $2.25
Socket.....doz. $1.75

Stuffers, Sausage—

Miles' Challenge, ₩ doz. $20...50@50&5%
Enterprise Mfg. Co.....25@25&7½%
National Specialty Mfg. Co., list Jan. 1, '97.....30%

Tacks, Brads, &c.—

List Jan. 15, '99.
Carpet Tacks:
American Blued.....90@90&10%
American Tinned.....90@90&10%
American Cut Tacks.....
85&10@85&10&10%
Swedes Iron Tacks.....90@90&10%
Swedes Upholsterers' Tacks.....
90&10@90&25%
Gimp Tacks.....90&10@90&25%
Lace Tacks.....90&10@90&25%
Trimmers' Tacks.....80@90&10%
Looking Glass Tacks.....70@70&10%
Bill Posters' and Railroad Tack....
90&10@90&25%
Hungarian Nails.....80&5@80&15%
Common and Patent Brads.....70&5%
Trunk and Clout Nails.....
75&5@75&10&5%

NOTE.—*The above prices are for Straight Weights.* *An extra 5% is given Star Weights* ** *and an extra 10&5% on Standard Weights.****

Miscellaneous—

Double Point Tacks.....9¢ *4 or 5* 10&5%
Steel Wire Brads, R. & E. Mfg. Co.'s list.....50&10@60%
See also Nails, Wire.

Tanks, Oil—

Emerald, S. S. & Co.....50-gal. $3.90
Emerald, S. S. & Co.....60-gal., $4.00
Queen City S. S. & Co., 50-gal.....$3.50
Queen City S. S. & Co., 60-gal.....$4.25

Tapes, Measuring—

American Asses' Skin...90¢ *4 or 5* 10&5%
Patent Leather.....85@80&5%
Steel.....40&10&5%
Chesterman's.....35@25&5%
Eddy's Steel.....40@40&5%
Eddy's Metallic.....33⅓@33⅓&5%
Keuffel & Esser Co., Steel and Metallic, Lower list, 1899.....35%
Lufkin's Steel.....33⅓@35%
Lufkin's Metallic.....30&5%

Thermometers—

Tin Case.....80@80&10%

Ties, Bale—Steel.

Standard Wire.....50&10&5%

Ties, Wall—

Cleveland, Steel.....₩ 1000, $10.00

Tinners' Shears, &c.—

See *Shears, Tinners', &c.*

Tinware—

Stamped, Japanned and Pieced, sold very generally at net prices.

Tire Benders, Upsetters, &c.—See *Benders and Upsetters, Tire.*

Tobacco Cutters—

See *Cutters, Tobacco*

Tools—

Coopers'—

L. & I. J. White.....20@20&5%

Saw—

Atkins' new list.....40%
Simonds' Improved.....33⅓%
Simonds' Crescent.....25%

Ship—

L. & I. J. White.....25%

Transom Lifters—

See *Lifters, Transom.*

Traps—Game—

Oneida Pattern.....70&10@75&5%
Newhouse.....45@50%
Hawley & Norton.....65&5&70%
Victor (Oneida Pattern).....75@75&10%
Star, (Blake Pattern).....65&10@70&5%

Mouse and Rat—

Mouse, Wood, Choker, doz. holes.9@10c
Mouse, Round or Square Wire.....
doz. $0.85@1.00
Marty French Rat and Mouse Traps (Genuine):
No. 1, Rat, ₩ doz. $12.00; case of 24 $10.50
No. 3, Rat, ₩ doz. $5.50; case of 50 $5.00
No. 3¼, Rat, ₩ doz. $4.50; case of 72 $4.00
No. 4, Mouse, ₩ doz. $3.50; case of 72 $2.75
No. 5, Mouse, ₩ doz. $2.75; case of 150 $2.25
Schuyler's Rat Killer, No. 1, ₩ gr. $30.00; No. 2, ₩ gr. $20.00; Mouse, No. 3, $18.00.....50%
Out o' Sight, Mouse, No. 1, ₩ doz. 60¢; Rat, No. 2, $1.25; Mole, $6.00; Gopher, $1.50; Stop Thief, No. 1, $1.25; No. 2, $1.50.

Fly—

Balloon, Globe or Acme.....
doz. $1.15@1.25; gro. $12.00@14.00
Harper, Champion or Paragon ...
doz. $1.25@1.40; gro. $13.50@15.00

Trimmers, Spoke—

Bonney's Nos. 1 and 2.....40%
Stearns'.....25%

Trowels—

Disston Brick and Pointing.....30%
Disston Plastering.....25%
Disston "Standard Brand" and Garden Trowels.....40%
Never-Break Steel Garden Trowels.....
gro. $7.00
Peace's Plastering.....30%
Rose Brick and Plastering.....25&5%
Woodrough & McParlin, Plastering.25&10%

Trucks, Warehouse, &c.—

B. & L. Block Co.'s list.....40%
Daisy Stove Trucks, Improved pattern ₩ doz. $21.00

Tubs, Wash—

	No. 1	2	3
Galvanized, per doz.	*$5.00*	*5 50*	*6.00*

Galvanized S. S. & Co., with Wringer Attachment, ₩ doz. No. 10, $7.25; No. 20, $7.75; No. 30.....$8.25

Twine—

Binder—

Carload lots f.o.b. New York, Philadelphia or Boston.
White Sisal, 500 ft. to lb. per lb. 11¼c
Standard, 500 ft. to lb....per lb. 11¼c
Manila, 600 ft. to lb ....per lb. 14½c
Pure Manila, 650 ft. to lb per lb 15½c
Less than carloads add ¼¢ per lb.

Miscellaneous—

Flax Twine—	*BO*	*B.*
No. 9, ¼ and ½-lb. Balls..	*22c*	*26c*
No. 12, ¼ and ½-lb. Balls..	*19c*	*22c*
No. 18, ¼ and ½-lb. Balls..	*16c*	*19c*
No. 24, ¼ and ½-lb. Balls..	*16c*	*19c*
No. 36, ¼ and ½-lb. Balls..	*15c*	*18c*

Chalk Line, Cotton, ¼-lb. Balls.....
18@30c
Cotton Mops, 6, 9, 12 and 15 lb. to doz.....7@30c
Cotton Wrapping, 5 Balls to lb ...
9@16c
American 3-Ply Hemp, ¼ and ½-lb. Balls.....12@18c
American 3 Ply Hemp, 1-lb. Balls..
12@18c
India 2-Ply Hemp, ¼ and ½-lb. Balls (Spring Twine).....10c
India 3-Ply Hemp, 1-lb. Balls.....10c
India 3-Ply Hemp, 1½-lb. Balls.... 9c
2, 3, 4 and 6-Ply Jute, ½-lb. Balls...
8@9c
Mason Line, Linen, ½-lb. Balls...45c
No. 2¾ Mattress, ¼ and ½-lb. Balls 35c
Wool.....7c

Vises—

Solid Box.....50@.....%
Bonney's Saw Vises.....40&10%

Parallel—

Athol Machine Co.:
Simpson's Adjustable.....40%
Standard.....40%
Amateur.....25%
Bonney's.....40&10%
Fisher & Norris Double Screw....15&10%
Hollands'.....40@40&10%
Lewis Tool Co.....20@30%
Massey's Perfect.....15@20%
Massey's Clincher.....30@40%
Merrill's.....20%
Miller's Falls.....low list 10%
Parker's:
Victor.....20@25%
Regulars.....20@25%
Vulcan's.....40@45%
Combination Pipe.....55@60%
Prentiss.....20@25%
Sargent's.....66⅔@66⅔&10%
Simpson's Adjustable.....40%
Snediker's X. L.....30@25%
Stephens'.....20@25%
Toles' Woodworking.....25%
Trenton.....40&5@40&10%

Saw Filers—

Bonney's, No. 1, $13; No. 3, $16 .50&10%
Disston's D S Clamp and Guide, ₩ doz $30.....25%
Reading.....40&10%
Wentworth's Rubber Jaw, Nos. 1, 2 and 3.....30&7½%

Miscellaneous—

Bignall & Keeler Combination Pipe Vise.....₨.....60%

Parker's Combination Pipe:
87 Series.....60%
187 Series.....60&5%
No. 870.....40%

Wads—Price Per M.

B. E., 11 up.....60c	
B. E., 9 and 10.....70c	
B. E., 8.....80c	
B. E., 7.....80c	
P. E., 11 up.....$1.00	*Dis. 30&5%*
P. E., 9 and 10..... 1.25	
P. E., 8..... 1.50	
P. E., 7..... 1.50	
Ely's B. E., 11 and larger..$1.70@1.75	
Ely's P. E., 12 to 20 .....$3.00@3.25	

Wagon Jacks—

See *Jacks, Wagon.*

Ware, Hollow—

Aluminum—
S. S. & Co. Reduced List.....40%

Cast Iron, Hollow—

Stove Hollow Ware:
Ground.....60@60&7½%
Unground.....65@65&10%
White Enameled Ware:
Maslin Kettles.. 75&10@75&10&5%
Boilers and Saucepans...55@55&5%
Tinned Boilers and Saucepans.....
55@55&5%
See also *Pots, Glue.*

Enameled—

Agate Nickel Steel Ware, list July '99..40%
Granite Ware, list Jan. 1, '94, revised Jan. 2, '95.....40&10%
Second Quality, Agate Nickel Steel..65%
Second Quality, Granite.....
70&10@70&10&10%
Iron Clad:
Peppered Ware, high list.....70%
Princess Ware, special list.....33⅓%
Mottled Ware, big list.....75%
Never Break Enameled....50&5@50&10%

Tea Kettles—

Galvanized Tea Kettles:

Inch.....	*6*	*7*	*8*	*9*
Each.....	*40c*	*45c*	*50c*	*60c*

Steel Hollow Ware.

Avery Spiders & Griddles.....65@65&5%
Avery Kettles.....60%
Porcelained.....50&5@50&10%
Never Break Spiders and Griddles.....
65@65&5%
Never Break Kettles.....60@60&10%
Solid Steel Spiders & Griddles.....65&5%
Solid Steel Kettles.....60%
Solid Steel Ware, Enameled.....50&5%

Silver Plated Hollow—

William Rogers Mfg. Co.....40&10%

Washboards—

Solid Zinc: ₩ doz
Crescent, family size, bent frame..$3.00
Red Star, laundry size, stationary protector.....$4.25
Double Zinc Surface:
Saginaw Globe, family size, stationary protector.....$2.65
Wilson, family size, bent frame...$2.75
Single Zinc Surface:
Naiad protector, family size, open back perforated.....$2.40
Saginaw Globe, protector, family size, ventilated back.....$2.25
Wilson, bent frame, family size, ventilated back.....$2.25

Washers—

Leather, Axle—

Solid.....80&10&10@85%
Patent.....85@85&5%
Coil: ¾ 1 1¼ 1¾ Inch.
12c 13c 14c 16c per 100

Iron or Steel—

Size bolt.... 5-16 ⅜ ½ ⅝ ¾
Washers....$6.20 5.30 4.00 3.80 3.60
In lots less than one keg add ¼c per lb., 5-lb. boxes add ½c to list.
NOTE.—*Jobbers' prices generally lower than manufacturers'.*

Washer Cutters—
See *Cutters, Washer.*

Washing Machines—
See *Machines, Washing.*

Water Coolers—
See *Coolers, Water.*

Weaners—
Tyler's New Halter—No. 1 ₱ doz. $3.45; No. 2, $3.70; No. 3, $4.60; No. 4, $4 80
Tyler'sSafety—Nos. 1 and 2, ₱ doz.$1.70; No. 3, $2.00; No. 4, $2.30.

Wedges—
Oil Finish.....lb. 4@4¼c
Axe Finish.....lb. 4¼@4½c

Weights, Sash—
Carloads at factory..... } See *Trade*
Less than carloads at factory..... } *Report.*
NOTE.—*There is a wide difference in prices East and West, and some Foundries are naming considerably higher prices than the above.*

Well Buckets, Galvanized
See *Pails, Galvanized.*

Wheels Well—
8-in., $1 75@2.00; 10-in., $2.25@2.60; 12-in., $2.75@3.25; 14-in., $3.00@4.50

Wire and Wire Goods—
Brt. and Ann., 6 to 9.....65@65&5%
Brt. and Ann., 10 to 13.....65&67½&67½&5%
Brt. and Ann., 19 to 26.....73½&2½&73½&67½&5%
Brt. and Ann., 27 to 36.....73½&67½&73½&67½&10%
Cop'd and Galv., 6 to 9.....60@60&5%
Cop'd and Galv., 10 to 13.....63½&63½&5%
Tinned, 6 to 14.....67½&2½&67½&5%
Tinned, 15 to 18.....65@65&5%
Annealed Wire on Spools.....60&10@60&10&5%
Brass, list Feb. 26, '96.....15%
Copper, list Feb. 26, '96.....15%
Cast Steel Wire.....50%
Stubs' Steel Wire.....$5.00 to $, 40%
Wire Clothes Line, see *Lines.*
Wire Picture Cord, see *Cord.*

Bright Wire Goods—
Iron and Brass, list July 1, 1899.....80&10@80&10&10%

Wire Cloth and Netting—
Galvanized Wire Netting.....75&10@75&10&5%
Painted Screen Cloth per 100 ft.....$1.45@1.55
Hardware Grade, 2 to 18 mesh.....sq. ft. 2½@3c
Hardware Grade, 20 x 20 mesh.....sq ft 3@3½c
Galv Hardware Grade, 2 to 5 mesh.....sq. ft 3½@3½c
Galv. Hardware Grade, 6 to 8 mesh.....sq. ft. 4@4½c

Wire Barb—See *Trade Repor*
Wire, Rope—See *Rope, Wire.*

Wrenches—
Agricultural.....75@ ...%
Baxter's S.....60&10%
Coes' Genuine.....25&10&5&5&3%
Coes' "Mechanics'"...25&10&10&5&5&3%
Acme.....60&10%
Aiken's Pocket (Bright).....$2.00@3.20
Alligator.....60&10&10%
Bemis & Call's:
Adjustable S.....35&5%
Adjustable 9 Pipe.....40%
Brigg's Pattern.....30&10%
Combination Black.....40&5%
Combination Bright.....40%
Cylinder or Gas Pipe.....55%
Extra Heavy.....45%
Merrick's Pattern.....50%
No. 3 Pipe, Bright.....55%
Bindley Automatic.....30%
Boardman's.....33⅓%
Bull Dog, W. & B.....60&10&10%
Donohue's Engineer.....40&10%
Eagle.....50&10%
Hercules.....70%
Solid Handles, P. S. & W.....40&10%
Stevenson.....60&10&10%
Stillson's.....55%

Wrought Goods—
Staples, Hooks, &c., list March 17 '91.....80&20@85%

Yokes, Neck—
Covert Saddlery Works Trimmed.60&5%
Covert Saddlery Works, Neck Yoke Centers.....70%

Yokes, Ox, and Ox Bows—
Fort Madison's Farmers & Freighters'.. list net

Zinc—
Sheet.....lb 7¼c@8c

PAINTS, OILS AND COLORS.—Wholesale Prices.

White Lead, Zinc, &c.

Lead, Foreign white, in Oil..... 7¼@ 9¼
Lead, American White, in Oil:
Lots of 500 ℔ or over..... @ 6¼
Lots less than 500 ℔..... @ 7
Lead, White, in oil, 25 ℔ tin pails, add to keg price..... @ ¼
Lead, White, in oil, 12½ ℔ tin pails, add to keg price..... @ 1
Lead, White, in oil, 1 to 5 ℔ assorted tins, add to keg price.. @ 1½
Lead White, Dry in bbls..... @ 5½
Lead, American. Terms: On lots of 500 lbs. and over, 60 days, or 2% for cash if paid in 15 days from date of invoice.
Zinc, American, dry..... ₱ ℔ 4½@ 5½
Zinc, Paris, Red Seal..... @ 8½
Zinc, Paris, Green Seal..... @ 9½
Zinc, Antwerp Red Seal..... @ 7½
Zinc, Antwerp, Green seal..... @ 8½
Zinc, V. M. in Poppy Oil, G. Seal lots of 1 ton and over..... @11½
lots less than 1 ton..... @12½
Zinc, V.M. in Poppy Oil, Red Seal, lots of 1 ton and over..... @10½
lots of less than 1 ton..... @11½
Discounts.—V. M. French Zinc.—Discounts to buyers of 10 bbl. lots of one or assorted grades, 1%; 25 bbls., 2%; 50 bbls. 4%. No discount allowed on less than 10 bbl. lots.

Dry Colors.

Black, Carbon.....₱ ℔ 6 @20
Black, Drop, Amer..... 2½@ 4
Black, Drop, Eng..... 5 @10
Black, Ivory..... 9 @20
Lamp, Com..... 3 @ 5
Blue, Celestial.....₱ ℔ 5½@ 8
Blue, Chinese.....35 @40
Blue, Prussian.....30 @38
Blue, Ultramarine..... 7 @25
Brown, Spanish..... 1@ 1
Brown, Vandyke, Amer..... 1½@ 2½
Brown, Vandyke, Foreign..... 2½@ 3½
Carmine, No. 40.....₱ ℔$2.15@2.75
Green, Chrome, ordinary..... 5 @ 6
Green, Chrome, pure.....19 @25
Lead, Red, bbls. ½ bbls. and kegs:
Lots 500 ℔ or over..... @ 6½
Lots less than 500 ℔..... @ 7
Litharge, bbls. ½ bbls. and kegs:
Lots 500 ℔ or over..... @ 6½
Lots less than 500 ℔..... @ 7
Ocher, French Washed..... 1½@ 2½
Ocher, Dutch Washed..... 4@ 5
Ocher, American.....₱ ton $10.00@15.00
Orange Mineral, English..₱ ℔ 9½@12
Orange Mineral, French.....11½@11½
Orange Mineral, German..... 9½@12
Orange Mineral, American..... 8½@ 8½
Red, Indian, English..... 4½@ 8½
Red, Indian, American..... 3 @ 3½
Red, Turkey, English..... 5 @10
Red, Tuscan, English..... 7 @10
Red, Venetian, Amer.,₱ 100 ℔. 80@1.10
Red Venetian, English,₱ ℔... 1.80@2.10
Sienna, Italian, Burnt and Powdered.....₱ ℔ 3½@ 6
Sienna, Ital., Raw, Powd..... 3½@ 6
Sienna, American, Raw..... 1½@ 2
Sienna, American, Burnt and Powdered.....₱ ℔ 1½@ 2
Talc, French.....₱ 100 ℔ $1.25 @1.50
Talc, American..... .90 @1.10
Terra Alba, French,₱ 100 ℔.. 80 @1.00
Terra Alba, English..... .85 @1.00
Terra Alba, American No. 1....65 @70
Terra Alba, American No. 2....45 @50
Umber, Turkey, Bnt. & Pow.₱ ℔ 2½@ 3½
Umber, Turkey, Raw & Powd. 2½@ 3½
Umber, Bnt. Amer..... 1½@ 2
Umber, Raw, Amer..... 1½@ 2
Yellow, Chrome.....10½@25
Vermilion, American Lead.....10 @25
Vermilion, Quicksilver, bulk.... @69
Vermilion, Quicksilver, bags.... @70
Vermilion, English, Import.. .71 @72
Vermilion Chinese.....80 @90

Colors in Oil.

Black' Lampblack..... 10 @14
Blue, Chinese..... 35 @40
Blue, Prussian.....32 @36
Blue, Ultramarine.....12 @16
Brown, Vandyke.....10 @13
Green, Chrome.....10 @14
Green, Paris..... @24
Sienna, Raw.....10 @13
Sienna, Burnt.....10 @13
Umber, Raw..... 9½@12
Umber, Burnt..... 9½@12

Miscellaneous.

Barytes, Foreign, ₱ ton....$18.00@20.00
Barytes, Amer. floated..... 19.00@20.00
Barytes, Crude..... 9.00@10.00
Chalk, in bulk.....₱ ton 2.15@ 2.35
Chalk, in bbls.....₱ 100 ℔ 35@ ...
China Clay, English..₱ ton 11.00@17.00
Cobalt, Oxide.....₱ 100 ℔ 2.00@ 2.10
Whiting, Common.₱ 100 ℔ .42@ .52
Whiting, Gilders..... .54@ .64
Whiting, extra Gilders'.... .58@ .68

Putty.

In bulk..... .....$1.85
In bladders..... 2.25
In cans, 50 ℔..... 2.00
In cans, 25 ℔..... 2.25
In cans, 12½ ℔..... 2.50
In cans, 5 ℔..... 3 50
In cans, 3 ℔..... 4 00
In cans, 2 ℔..... 4.50
In cans, 1 ℔..... 5.00

Spirits Turpentine.

In Southern bbls..... @54½¢
In machine bbls..... @55 ¢

Glue.

Low Grade.....₱ ℔ 13 @15
Cabinet..... 13 @16
Medium White..... 14 @16
Extra White..... 16 @25
French..... 12 @25
Irish..... 13 @15

Animal, Fish and Vegetable Oils.

Linseed, City, raw.....₱ gal. 56 @57
Linseed, City, boiled..... 58 @59
Linseed, State and West'n, raw 54 @55
Linseed, raw Calcutta seed..... @68
Lard, Prime..... 50 @53
Lard, Extra No. 1..... 44 @46
Lard, No. 1..... 41 @43
Cotton-seed, Crude..... 33 @34
Cotton-seed, Summer Yellow, prime..... 36½@37
Cotton-seed Summer Yellow, off grades..... @ ..
Sperm, Crude..... @ ..
Sperm, Natural Spring..... @ ..
Sperm, Bleached Spring..... @ ..
Sperm, Natural Winter..... 55 @59
Sperm, Bleached Winter..... 60 @68
Whale, Crude..... @ ..
Whale, Natural Winter..... 46 @47
Whale, Extra Bleached Win.. 50 @51
Menhaden, Crude, Sound..... @27
Menhaden, Light S'r'a'ned..... 30 @31
Menhaden, Bleached Winter.. 35 @ ..
Menhaden, Extra Bleached..... @37
Tallow, prime..... 55 @56
Cocoanut, Ceylon..... 5½@ 6
Cocoanut, Cochin..... 6½@ 6¾
Cod, Domestic..... 33 @35
Cod, Newfoundland..... 36 @38
Red Elaine..... 36 @40
Red Saponified.....₱ ℔ 5½@ 5½
Bank.....₱ gal. @ ..
Straits..... @ ..
Olive, Italian, bbls..... 60 @61
Neatsfoot, prime..... 48 @50
Palm, prime, Lagos.....₱ ℔ 6 @ 6¼

Mineral Oils.

Black, 30 gravity, 25@30 cold test.....₱ gal. 11 @11½
Black, 29 gravity, 15 cold test. 12 @12½
Black, summer..... 10½@11
Cylinder, light filtered..... 15 @17½
Cylinder, dark filtered..... 13 @18
Paraffine, 903-907 gravity..... 14 @14½
Paraffine, 903 gravity..... 13 @13½
Paraffine, 883 gravity..... 11½@12
Paraffine, red, No. 1..... 14 @14½
In small lots ½¢ advance.

THE IRON AGE.

The oldest paper in the world devoted to the interests of the Hardware, Iron, Machinery and Metal Trades, and a standard authority on all matters relating to those branches of industry.

RATES OF SUBSCRIPTION: INCLUDING POSTAGE.

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CURRENT METAL PRICES.

JANUARY 31, 1900.

The following quotations are for small lots. Wholesale prices, at which large lots only can be bought, are given elsewhere in our weekly market report.

IRON AND STEEL—

Bar Iron from Store—

Common Iron: Duty, Round, 0.6¢ ₱ lb; Square, 0.8¢ ₱ lb
1 to 1⅝ in. round and square ... } ₱ lb 2.50@2.60¢
1¼ to 4 in. x ⅝ to 1 in. ... }
Refined Iron:
1 to 1⅝ in. round and square ... } ₱ lb 2.60@2.70¢
1¼ to 4 in. x ⅜ to 1 in. ... }
1¼ to 4 in. x ¼ to 5-16 ... ₱ lb 2.80@2.90¢
Rods—⅜ and 11-16 round and square. ₱ lb 2.80@2.90¢

Angles:	Cts ₱ lb
3 in. x ¼ in. and larger	3.25¢
3 to 3½ in. x 3-16 in.	3.25¢
1¼ to 2 in. x ¼ in.	3.40¢
1¼ to 2¾ in. x 3-16 in. and thicker	3.30¢
1 to 1¼ in. x 3-16 in.	3.40¢
1 to 1¼ x 1¼ in.	3.50¢
⅞ x 1¼ in.	3.60¢
⅞ x ⅛ in.	3.65¢
⅝ x ⅛ in.	4.50¢
⅜ x 3-32 in.	5.00¢
Tees:	
1 in.	3.70¢
1¼ to 2½ in.	3.60¢
3 in. and larger	3.40¢
Beams	3.50¢
Channels, 3 in. and larger	3.50¢
Bands—1½ to 6 x 3-16 to No. 8	₱ lb 3.10¢
"Burden's Best" Iron, base price	₱ lb 3.60¢
Purden's "H. B. & S. Iron, base price	₱ lb 3.40¢
"Ulster"	₱ lb 3.60¢
Norway Bars	4 @4½¢
Norway Shapes	4½@5 ¢

Merchant Steel from Store—

	per lb
Open Hearth and Bessemer Machinery	3.00 to 3.10¢
Toe Calk, Tire and Sleigh Shoe	3.75@4.00¢
Best Cast Steel, base price in small lots	8 ¢
Best Cast Steel Machinery, base price in small lots	6 ¢

Soft Steel Sheets—

¼ inch	3.30¢	No. 14	3.40¢
3-16 inch	3.40¢	No. 16	3.50¢
No. 8	3.30¢	No. 18	3.55¢
No. 10	3.30¢	No. 20	3.60¢
No. 12	3.35¢	No. 22	3.65¢

Sheet Iron from Store.

Black.

	Common American.	R. G. Cleaned American.
Nos. 10 to 16	₱ lb, 3.25¢	3.25¢
Nos. 17 to 21	₱ lb, 3.30¢	3.35¢
Nos. 22 to 24	₱ lb, 3.35¢	3.45¢
Nos. 25 and 26	₱ lb, 3.40¢	3.50¢
No. 27	₱ lb, 3.45¢	3.55¢
No. 28	₱ lb, 3.50¢	3.65¢

Russia, Planished, &c.

Genuine Russia, according to assortment ... ₱ lb 10½¢
Patent Planished ... ₱ lb A, 10½¢; B, 9½¢, net.

Galvanized.

	B. B.
Nos. 10 to 16	₱ lb, 12¢
Nos. 17 to 21	₱ lb, 13¢
Nos. 22 to 24	₱ lb, 14¢
Nos. 25 to 26	₱ lb, 15¢
No. 27	₱ lb, 16¢
No. 28	₱ lb, 17¢
No. 29	₱ lb, 19¢
No. 30	₱ lb, 21¢

70&5@70&10% off
36 in. 1¢ ₱ lb higher.

Foreign Steel from Store—

Best Cast	₱ lb 14 ¢
Extra Cast	₱ lb 16½ @ 17 ¢
Swaged, Cast	₱ lb 16 ¢
Best Double Shear	₱ lb 14 ¢
Blister, 1st quality	₱ lb 12 ¢
German Steel, Best	₱ lb 10 ¢
2d quality	₱ lb 9 ¢
3d quality	₱ lb 8 ¢
Sheet Cast Steel, 1st quality	₱ lb 14 ¢
2d quality	₱ lb 13 ¢
3d quality	₱ lb 11 ¢
R. Mushet's "Special"	₱ lb 46 ¢
" " " Annealed	₱ lb 75 ¢
" " "Titanic"	₱ lb 19 ¢
Hobson's Choice XX Extra Best	₱ lb 35 ¢
Jessop Self Hardening	₱ lb 40 ¢
Seamans' "Nelson" Steel	40 ¢
Hobson Self-Hardening	₱ lb 40 ¢

METALS—

Tin—

Duty.—Pigs, Bars and Block. Free. Per lb

Banca, Pigs	29@29½¢
Straits, Pigs	28½@29¢
Straits in Bars	29½@30¢

Tin Plates—

American Charcoal Plates.

Calland Grade:	
IC, 14 x 20	$7.50
IX, 14 x 20	9.00
Melyn Grade:	
IC, 14 x 20	7.00
IX, 14 x 20	8.50
Allaway Grade:	
IC, 14 x 20	6.15
IX, 14 x 20	7.25

American Coke Plates—Bessemer—

IC, 14 x 20 ... 108 lb	$5.30@5.40
IX, 14 x 20	6.25@6.30
IXX, 14 x 20	7.50@7.60

American Terne Plates—

IC, 20 x 28	$10.50
IX, 20 x 28	12.50

Tin Boiler Plates, American—

IXX, 14 x 28	112 sheets	$13.00
IXX, 14 x 26	112 sheets	14.00
IXX, 14 x 31	112 sheets	15.50

Copper—

Duty: Pig, Bar and Ingot and Old Copper free Manufactured, 2½¢ ₱ lb.

Ingot—

Lake	17¼¢
Ansonia grade Casting	16¼¢

Sheet and Bolt—

January 19, 1900. Prices, in cents per pound. Sheet 90 x 60. Net.

Not wider than	Not longer than	And longer than	64 oz. & over, 90 lb. sheet, 30 x 60 and heavier.	32 oz. to 64oz. 25 to 50 lb.	24 oz. to 32 oz. 18¾ to 25 lb.	16 oz. to 24 oz. 12½ to 18¾ lb.	14 oz. and 15 oz. 11 to 12½ lb.	12 oz. and 13 oz. 9½ to 11 lb.	10 oz. and 11 oz. 7½ to 9½ lb.	8 oz. and 9 oz. 6¼ to 7½ lb.	Lighter than 8 oz.
Ins.	Ins.	Ins.									
30	72	.....	20½	20½	20½	20½	21½	22½	23½	26½	29½
30	96	72	20½	20½	20½	20½	21½	22½	23½	26½	29½
30	.....	96	20½	20½	20½	20½	21½	22½	23½	27½	30½
36	72	.....	20½	20½	20½	20½	22½	23½	24½	27½	30½
36	96	72	20½	20½	20½	20½	22½	23½	25½	29½	
36	120	96	20½	20½	20½	20½	22½	23½			
36	.....	120	20½	20½	21½	22½					
48	72	.....	20½	20½	21½	22½	24½	27½	30½		
48	96	72	20½	20½	21½	23½	25½	28½			
48	120	96	20½	21½	22½	24½	28½				
48	.....	120	20½	21½	23½	26½					
60	72	.....	20½	21½	21½	23½	26½	31½			
60	96	72	20½	20½	22½	24½	29½				
60	120	96	20½	21½	23½	26½					
60	.....	120	20½	22½	24½	28½					
72	96	.....	20½	21½	23½	28½					
72	144	96	20½	22½	25½	30½					
72	.....	144	21½	23½	28½						
108	120	.....	21½	23½	29½						
108	.....	120	21½	24½							
wider than 108	.....	144	24½	26½							
	.....	144	25½	28½							

Bolt Copper, ⅜ inch diameter and over, ₱ lb 20½¢
Circles, Segments and Pattern Sheets, 3¢ ₱ lb advance over price of Sheet Copper required to cut them from.
Cold or Hard Rolled Copper 14 oz. ₱ square foot and heavier, 1¢ ₱ lb over the foregoing prices.
Cold or Hard Rolled Copper, lighter than 14 oz. ₱ square foot, 2¢ ₱ lb over the foregoing prices.
All Polished Copper, 20 in. wide and under, 1¢ ₱ lb advance over the price for Cold Rolled Copper.
All Polished Copper, over 20 in. wide, 2¢ ₱ lb advance over the price for Cold Rolled Copper.

Planished Copper—

1¢ ₱ lb more than Polished Copper.

Copper Bottoms, Pits and Flats—

14 oz. to square foot and heavier, ₱ lb ... 24½¢
12 oz. and up to 14 oz. to square foot, ₱ lb ... 25½¢
10 oz. and up to 12 oz., ₱ lb ... 27½¢
Lighter than 10 oz., ₱ lb ... 30½¢
Circles less than 8 in. diameter, 2¢ ₱ lb addition.
Circles over 13 in. diameter are not classed as Copper Bottoms.

Copper Wire—

Hard and Soft Drawn—B. & S. Gauge.

Nos.	0000 to 8 Base	9 and 10		11 and 12
		½¢		¾¢ ₱ lb adv.
Nos.	13	14	15	16
	¼¢	¾¢	1¢	1¼¢ ₱ lb adv.
Nos.	17	18	19	20
	1½¢	2¢	2½¢	2¾¢ ₱ lb adv.

Seamless Brass Tubes—

Standard always Stubs' gauge, unless otherwise ordered.
Feb. 6, 1899. Net.

Stubs' W. G.	B. & S. W. G.	¼	5-16	⅜	7-16	½	9-16	⅝	¾	⅞	1	1¼	1½
Outside Diameter.													
4-11	3- 9	...	.....	...	.....	33	31	30	29	28	27	25	24
12	10	...	.....	37	35	33	31	30	29	28	27	25	24
13	11	...	.....	37	35	33	31	30	29	28	27	25	24
14	12	...	41	37	35	33	31	30	29	28	27	25	24
15	13	...	42	38	36	33	32	31	30	30	28	26	25
16	14	...	43	39	37	34	33	32	31	30	29	26	25
17	15	...	44	40	38	35	34	33	32	31	30	27	26
18	16	61	46	42	39	36	35	34	32	31	30	28	27
19	17	62	47	43	40	37	36	35	34	33	32	30	29
20	18-19	64	49	44	41	39	38	37	36	35	34	32	31
21	20	66	51	46	43	41	40	39	38	37	36	35	34
22	21	71	56	48	44	42	41	40	39	38	37	37	36
23	22	76	61	50	46	44	43	42	42	40	39	39	39
24	23	81	66	53	48	46	45	44	43	41	40	40	41
25	24	86	72	56	51	49	47	46	45	43	43	44	45

Copper Bronze and Gilding Tube, 3¢ ₱ lb additional

Iron Pipe Sizes—Brass

⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6 inch
30	32	20	27	21	21	21	21	21	21	21	26	23	25	27	28¢₱lb

Copper, Bronze or Gilding Tubes, 3¢ ₱ lb additional

Brazed Brass Tubing.

(*To No. 19, inclusive.*) Feb. 26 1896
Brown & Sharpe's gauge standard.

				Per lb.
Plain Round Tube, ¼ in.	up to	2 in.		$0.35
" " ⅜	"	¾ "		.36
" " ½	"	¾ "		.38
" " ⅝	"	⅞ "		.41
" " 5-16	"	⅞ "		.43
" " ¼	"	5-16 "		.65
" " 3-16	"	¼ "		1.00
" " ⅛	"	3-16 "		1.50
Smaller than ⅛ inch				Special
⅛ inch and larger				.40
Over ⅛ inch to 3½ inch, inclusive				.45
Over 3½ inch				.50

Bronze and Copper, advance on Brass List, 3 cents.
Discount from list ⅝ ... 25@30%

Roll and Sheet Brass—

(*Brown & Sharpe Standard Gauge.*)

Common High Brass	in.	in.	in.	in.	in.	in.	in.	in.
Wider than and including	2 12	12 14	14 16	16 18	18 20	20 22	22 24	24 26
To No. 20, inclusive	.22	.23	.25	.27	.29	.31	.33	.36
Nos. 21, 22, 23 and 24	.22	.24	.26	.28	.30	.32	.34	.37
Nos. 25 and 26	.23	.24½	.27	.29	.31	.33	.35	.38
Nos. 27 and 28	.23	.25	.28	.30	.32	.34	.36	.39

Common High Brass	in.	in.	in.	in.	in.	in.	in.	in.
Wider than and including	26 28	28 30	30 32	32 34	34 36	36 38	38 40	40
To No. 20, inclusive	.39	.42	.46	.50	.55	.60	.65	*
Nos. 21, 22, 23 and 24	.40	.43	.47	.51	.56	.61	.68	
Nos. 25 and 26	.41	.44	.48	.53	.57	.63	.71	
Nos. 27 and 28	.42	.45	.49	.53	.58	.65	.75	

* Special prices not less than 80 cents.
Add ½¢ ₱ lb additional for each number thinner than Nos. 28 to 38 inclusive. Discount from List ... 15%

Wire in Coils. List February 26, 1896.

Brown & Sharpe's gauge the standard.	Com. high brass.	Low brass.	Gilding bronze and copper
All Nos. to No. 10, inclusive	$0.23	$0.27	$0.28
Above No. 10 to No. 16	.23½	.27½	.28½
No. 17 and No. 18	.24	.28	.29
No. 19 and No. 20	.25	.29	.30
No. 21	.26	.30	.34
No. 22	.27	.31	.35
No. 23	.28	.32	.36
No. 24	.30	.34	.38
No. 25	.32	.36	.40
No. 26	.35	.39	.43
No. 27	.38	.42	.46
No. 28	.42	.46	.51
No. 29	.45	.49	.54
No. 30	.48	.52	.62
No. 31	.51	.55	.67
No. 32	.55	.59	.73
No. 33	.59	.63	.83
No. 34	.64	.68	.95
No. 35	.70	.74	1.30
No. 36	.76	.80	1.50
No. 37	1.00	1.04	1.70
No. 38	1.30	1.34	2.00
No. 39	2.00	2.00	3.25
No. 40	2.60	2.60	5.75

Discount, Brass Wire, 15%; Copper Wire, Net.
List November 16, 96.
Spring Wire, 2¢ ₱ lb advance.

Spelter—

Duty: In Blocks or Pigs, 1¢ ₱ lb
Western Spelter ... 5¼@5¾¢

Zinc.

Duty: Sheet, 2¢ ₱ lb.
600 lb casks ... 7¾¢ | Per lb ... 8@8¼¢

Lead.

Duty: Pigs and Bars and Old, 2½¢ ₱ lb. Pipe and Sheets, 3½¢ ₱ lb.

American Pig	5½@5¾¢
Bar	6¾¢
Pipe (full lengths), subject to discount 20%	7¢
Pipe cut lengths), subject to discount 20%	7¼¢
Tin Lined Pipe, subject to discount 20%	12½¢
Block Tin Pipe, subject to discount 20%	40¢
Sheet (full rolls) subject to discount 20%	8¢
Sheet (cut rolls (subject to discount 20%	9¢

Old Lead in exchange, 4¼¢ ₱ lb.

Solder.

½ & ½, guaranteed ... 19@20¢
No. 1 ... 16@17¢
Prices of Solder indicated by private brand vary according to composition.

Antimony—

Duty, ¾¢ ₱ lb.

Cookson	₱ lb 11¼
Hallett's	₱ lb 10¼
U. S.	₱ lb 10@10½¢

Aluminum—

Duty: Crude, 8¢ ₱ lb. Plates, Sheets, Bars and Rods, 13¢ ₱ lb.

No. 1 Aluminum (guaranteed over 99% pure), in ingots for remelting:
Small lots ... ₱ lb 37¢
100-lb lots ... ₱ lb 35¢
No. 2 Aluminum (guaranteed to be over 90% pure), in ingots for remelting:
Small lots ... ₱ lb 34¢
100-lb lots ... ₱ lb 33¢
Aluminum Sheet, B. & S. gauge. 50 lb or more.

Wider than	6-in.	14-in.	24-in.
And including	14-in.	24-in.	30-in.
	₱ lb.	₱ lb.	₱ lb
Nos. 13 to 19	$0.42	$0.44	$0.47
No. 20	.44	.46	.49
Nos. 21 to 23	.46	.48	.51
No. 24	.46	.50	.53
No. 25	.47	.51	.54
No. 26	.47	.54	.59
No. 27	.48	.57	.62
No. 28	.48	.57	.64
No. 29	.49	.60	.69
No. 30	.50	.64	.77

Note.—Lots of less than 50 lb 5¢ ₱ lb extra.

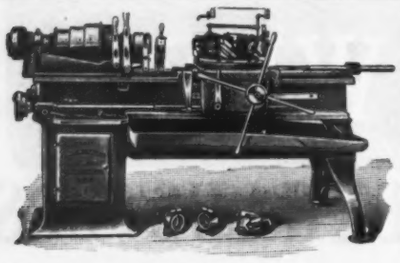
Aluminum Wire, B. & S. Gauge.

Larger than No. 9	₱ lb 40¢	No. 15	₱ lb 43¢
No. 9 to No. 10	₱ lb 40½¢	No. 17	₱ lb 50¢
No. 11	₱ lb 41 ¢	No. 18	₱ lb 55¢
No. 12	₱ lb 41½¢	No. 19	₱ lb 60¢
No. 13	₱ lb 42 ¢	No. 20	₱ lb 65¢
No. 14	₱ lb 42½¢	No. 21	₱ lb 85¢

Old Metals.

Dealers' Purchasing Prices Paid in New York.

Heavy Copper	₱ lb 14¼¢
Light and Tinned Copper	₱ lb 13 ¢
Heavy Brass	₱ lb 10¾¢
Light Brass	₱ lb 8 ¢
Lead	₱ lb 4½¢
Tea Lead	₱ lb 4¢
Zinc	₱ lb 3½¢
No. 1 Pewter	₱ lb 17 ¢
No. 2 Pewter	₱ lb 9 ¢
Tin Plate Scrap	₱ ton $6.00
Wrought Scrap Iron	₱ gross ton $12.75
Heavy Cast Scrap	₱ gross ton $11.25
Stove Plate Scrap	₱ gross ton $7.50
Burnt Iron	₱ gross ton $5.50



The Flat Turret Lathe

Does lathe work accurately up to 2 in. diameter by 24 in. long.

JONES & LAMSON MACHINE CO.

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AND
26 Pall Mall, Manchester, in charge of HENRY KELLEY & CO.

PH. BONVILLIAN,
6 Rue Blanche, Paris, France.

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The only reasons that higher prices are being constantly paid by the most prominent steam users in the United States for Cahall Boilers are—that they are better made, last longer, cost less for maintenance, show a higher efficiency and make drier steam than any other kind.

Send for illustrated catalogue.

Cahall Sales Department, Pittsburg, Pa

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ALUMINUM

Ingots, Sheet, Wire, Rods, and Castings.

Aluminum sheet is now 10 per cent. cheaper than brass, and cheaper than all other metals except iron, zinc and lead.

The Pittsburgh Reduction Company,
Pittsburgh, Pa.

THE W. S. TYLER COMPANY,

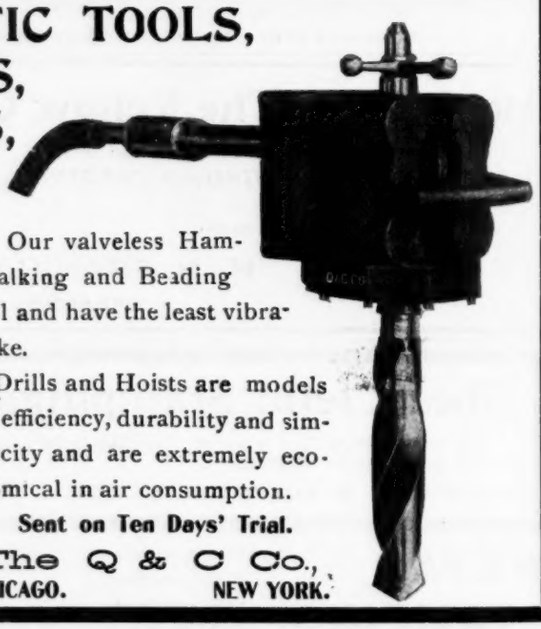
Successors to
THE W. S. TYLER WIRE WORKS CO.,
MANUFACTURERS OF

BRASS, STEEL AND GALVANIZED WIRE CLOTH,

Foundry Riddles, Coke and Coal Screens.

W. S. TYLER, Pres. PROCTOR PATTERSON, Sec. and Treas.
CLEVELAND, OHIO.

PNEUMATIC TOOLS, HAMMERS, RIVETERS, DRILLS, HOISTS.



Our valveless Hammers for Chipping, Calking and Beading are the most powerful and have the least vibration of any other make.

Our Riveters, Drills and Hoists are models of efficiency, durability and simplicity and are extremely economical in air consumption.

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Sent on Ten Days' Trial.

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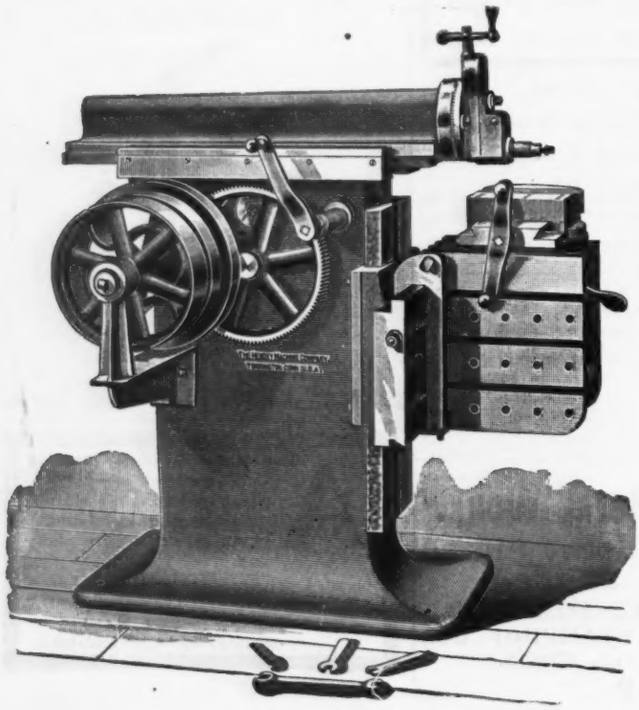
20-INCH HENDEY FRICTION SHAPER.



Our Very Latest Design, Embodying All Improvements.

STROKE OF RAM, 20-INCH.
CROSS FEED OF TABLE, 19¼-INCH.
VERTICAL FEED OF HEAD, 4½-INCH.

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